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THE IMPROVEMENT OF GENERAL ANESTHESIA ON THE BASIS OF SCHLEICH'S PRINCIPLES:

WITH SPECIAL REFERENCE TO ANESTHOL.

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In the writer's previous paper¹ on this subject the principal points brought out were the following:

Ether as well as chloroform are poisonous substances. We probably do not go wrong in assuming that one out of every 10,000 patients dies while under the influence of ether and one out of every 2,000 while under that of chloroform. This estimate refers only to cases succumbing on the operating table. Thus there surely is a certain amount of risk involved in every case of general anesthesia, although the exact extent of same can not be determined beforehand in the individual case.

It is this element of uncertainty as to the fate of the patient to be narcotized that has prompted many medical men, since the discovery of cocaine, to discard general anesthesia as far as possible and try to get along with local cocaine anesthesia. Although in the hands of an expert even major operations can be performed with the help of local (infiltration) or regional anesthesia, it nevertheless remains a fact that general narcosis can not be abolished entirely; there are and always will be many surgical interventions that can be carried out only with the patient under general anesthesia. Can the risk, which the individual patient runs in undergoing general anesthesia, be diminished?

The efforts of medical men and chemists heretofore have been directed toward finding a new, less dangerous narcotic substance as well as toward improving the chemical condition of the known anesthetics by aiming to obtain them in an absolutely chemically pure state.

SCHLEICH'S REASONING.

Schleich conducted his investigations on entirely new lines, namely, by starting from a physical instead of from a chemical basis. His reasoning,² based on experimental studies on animals, is briefly as follows: The amount of a narcotic substance that evaporates in a given time—barometric pressure being equal—depends on two factors:

1. The surrounding temperature, that is to say, in connection with general anesthesia: the temperature within the lungs or within the body ($T. B.^3$). This is rather constant, about 100.4 F.

2. The boiling point of the narcotic ($B. P.^3$); or, as one might also term it, its maximum of evaporation.

Both of these factors greatly influence the absorption into the blood as well as the elimination from it of an anesthetic introduced into the human or animal body. If a person or animal inhales an anesthetic that has its $B. P.$ at 59 F. (15 C.), as, for instance, ethyl chlorid, it is obvious that more of the drug quantitatively is introduced into the lungs, and through these into the blood, than would be of an anesthetic that has its $B. P.$ at 149 F. (65 C.), as has for instance chloroform.

The ability of the organism to eliminate the narcotic is increased in the measure as the $B. P.$ of the narcotic corresponds to the $T. B.$, provided this relation be not disturbed by a momentary firmer chemical combination. This relation can be well studied with the narcotics mostly in use to-day, i. e., ether, chloroform and ethylbromid. As experience has proved, their chemical combination is generally volatile and loose.

If the $B. P.$ of the narcotic corresponds to or approaches the $T. B.$, the lungs alone are capable of properly regulating the elimination of a gaseous poison. By their increased action they can prevent the accumulation and retention of deadly fatal doses; exactly as much of the narcotic is eliminated during expiration as was inhaled during inspiration. This explains the fact that a deep narcosis can not be produced at all if the $B. P.$ of the narcotic and the $T. B.$ correspond.

If, however, the $B. P.$ of the narcotic is considerably higher than the $T. B.$, as is the case with chloroform, namely, 149 F., more is retained during inspiration than is eliminated during expiration. Only so much of the amount as was retained by the blood corpuscles and blood serum can be eliminated with each expiration as corresponds to the $B. P.$ of chloroform at the temperature within the lungs, namely, 100.4 F. The superamount can not be eliminated by the lungs, physically. This must be done somewhere else within the system. Other parenchymatous organs must be called into action, i. e., heart, kidneys and liver. This explains why the after-effects on those organs are so much more pronounced after the administration of chloroform than after that of ether. It also accounts for the fact that we find no lesions within the lungs, but rather in the other parenchymatous organs of a person who died under chloroform.

In distinct contrast to these findings we notice the greatest amount of damage in the pulmonary paren-

1. Read Dec. 27, 1897, before the Medical Society of the County of New York, entitled: "The Improvement of General Anesthesia by Adapting the Boiling Point of the Narcotic to the Temperature of the Body (Schleich)."

2. Schmerzlose Operationen, II Aufl., Berlin, 1897.

3. In the following résumé of Schleich's paper temperature of the body will be indicated by $T. B.$, and boiling point by $B. P.$

chyma of the lungs following the administration of sulphuric ether. Sulphuric ether, having a B. P. at 93.2 F. (34 C.) fills the alveoli of the lungs, and at their temperature of 100.4 F. must expand and thus distend the alveoli and oppose an abnormal intra-alveolar pressure to the elimination of carbonic acid gas from the blood. It is thus that the inhalation of ether disturbs respiration and immediately causes a certain degree of cyanosis. This initial cyanosis is, therefore, the consequence of retention in the blood of carbonic acid gas. Further consequences of this retention are: reflex salivation and secretion of mucus, stretching of the alveolar epithelial cells, and, in direct connection therewith, the frequent occurrence of secondary pneumonic infiltrations. The alveolar cells when under such abnormal pressure, are not able to overcome the effects of inflammatory material which may have become aspirated. They can do so under ordinary conditions by their normal vital resistance (Nauwerck).

However, the disturbance in the intrapulmonary diffusion of gases gradually becomes regulated. The partial pressure of the carbonic acid accumulating within the blood gradually reaches and partially overcomes the tension of the ether vapors within the alveoli sufficiently to permit its escape from the blood into the same. The cyanosis disappears with the initial carbonic acid asphyxia and the true ether narcosis begins. But the carbonic acid within the alveoli still encounters an abnormal resistance from the ether which is constantly pouring into the lungs. The complete escape of carbonic acid gas in expiration is, therefore, obstructed. The gas gradually accumulates in the lung parenchyma and at a certain tension its intra-alveolar pressure helps to force the ether into the blood. It is this gradual increase of the pressure of the carbonic acid gas within the lungs that enables the blood to retain a certain amount of ether. Although elimination of ether is almost equal to its absorption, it is the slight excess that remains in the blood which suffices to affect the brain and produce unconsciousness. The greatly accelerated rhythm of breathing, which increases the amount of oxygen entering the blood, facilitates the elimination of carbonic acid by the laws of diffusion of gases involved in normal respiration. Incidentally the elimination of ether is also facilitated. For this reason death from ether on the operating table is almost impossible as long as respiration is efficient.

On the other hand, all these processes just described account for the fact that ether narcosis sometimes has such deleterious effects on patients suffering from lung trouble. The primary and only condition for the regular elimination of the ether vapors is an absolutely intact lung—a lung that is able, if necessary, to do more than the usual amount of work.⁴

To sum up: Schleich believes that it is only on account of its high B. P. that chloroform, when administered for narcosis, is absorbed by the blood to a greater extent than is needed for the purpose. It, moreover, leaves the organism only by degrees. In doing so it overtaxes all the parenchymatous organs, thereby injuring their cells. Ether, on the other hand, with its B. P. at 93.2 F. (34 C.), is converted into vapor so rapidly when inhaled into the lungs with their temperature of 100.4 F., that it would not enter the blood at all—loosely bound as it is—if the alveoli did not first become overfilled with carbonic acid gas, producing primary cyanosis and dyspnea. It is with the help of this cyanotic

attack that, it seems, the narcotic effect of the sulphuric ether begins.

ANESTHETIC MIXTURE.

Being personally convinced of the correctness of these deductions, supported as they were by the results of his experiments on animals, Schleich started his research for the purpose of finding a narcotic, the B. P. of which would correspond to the T. B. That is to say, he wanted to find a safe and inexpensive narcotic of which the amount eliminated during expiration would almost equal that absorbed during the previous inspiration. If this could be accomplished, such new narcotic substance would not—Schleich felt confident—share the annoying effects of ether and chloroform when administered alone, nor the many dangers involved as regards the patient. Such new anesthetic could be found in a mixture only.

The use of mixtures of ethereal substances for general anesthesia is nothing new in the history of anesthetics. Thus the English have had their A.C.E. mixture of world-wide fame for the last thirty-three years. At Vienna a mixture of one part of chloroform and six parts of ether has been used so extensively as to be known for a long time as "the Vienna mixture." The late Professor Billroth of Vienna used a mixture of one part of ether and alcohol each and three parts of chloroform. These mixtures were liked and praised by many; they were absolutely denounced as ineffective, dangerous, etc., by others. Kocher of Bern stated that he never permitted the use of the latter mixture in his clinic, because he was sure that in administering it to patients a small quantity of chloroform, of ether and of alcohol would be absorbed. He declared himself opposed to mixing narcotics. In an article by an American writer⁵ we find the following words: "Against such mixtures the argument has always been urged that a new chemical is not thus made with a single rate of diffusion; and that, while the rate of relative evaporation is doubtless in part modified by the mixture, the patient substantially gets first ether, then chloroform, then alcohol, in order of volatility. The writer agrees with the majority of authors in feeling that a gain in security is not made thereby. 'Straight drinks' are the safest, to speak after the manner of the world."

Correct as this may seem theoretically, in practice mixtures have proved safer than ether or chloroform alone. Our English colleagues have reported 15,000 cases of major anesthesia with the A.C.E. mixture without a single death. It is also stated from Vienna that there have been 8,000 administrations of the Vienna mixture without a death. The reason for the greater safety of the so-called mixtures, according to Schleich's investigations, consists in the fact that they are chemical solutions—not mixtures—having a new B. P. different from that of any of the components. Thus the B. P. of the A.C.E. mixture is about 119 F. (49 C.), certainly a good deal nearer the T. B. than chloroform, with its B. P. at 149 F. (65 C.). Schleich was the first to make this assertion.

SCHLEICH'S EXPERIMENTS WITH MIXTURES.

On the basis of this conviction, Schleich experimented with different ethereal substances with a view to finding a mixture the B. P. of which would correspond to the T. B. After considerable experimenting he at last selected ether, chloroform and petroleic ether (that is, benzine). The latter's action, as Schleich maintains, is indifferently, as far as its narcotizing effect is concerned.

4. Whether this physical reasoning of Schleich is correct in all its details, I do not propose to discuss here.

5. R. H. M. Dawbarn: General Considerations on Major Anesthesia, etc., New York Polyclinic, April and June, 1897; *Atlantic Medical and Surg. Journal*, August, September and October, 1897.

It is used for the purpose of diluting the chloroform, that is to say, for the purpose of diminishing the latter's poisonous effects on the system. In order to be effective it must have its B. P. almost equal to that of chloroform, about 149 F. (60-65 C.). Schleich makes the following postulates:

1. By so mixing various ethereal substances the resulting fluid is a real solution in a chemical sense;⁶ a new fluid, a new narcotic, if you so wish, and not a mixture of different ethereal substances which evaporate each, individually.

2. By changing the proportion of the components we can change the B. P. of the solution at will, according to necessity arising in a given case. We can thus individualize, i. e., we can in a given case adapt the B. P. of the narcotic to the T. B. as the thermometer may have shown before operation.

3. These facts hold good and are verified in regard to cold-blooded as well as warm-blooded animals. Frogs and crabs did not react differently from doves, rabbits and cats with reference to an anesthetic, the B. P. of which did not correspond to the T. B.

4. The result is the same, no matter whether the solution be inhaled, given per rectum or injected subcutaneously.

5. In administering the solution to the human subject the results are exactly the same as those observed in animals.

The possibility of changing the B. P. of the new anesthetic mixtures at will induced Schleich to recommend three different mixtures, their proportion to be based on the facts mentioned above: that the higher the B. P. of a narcotic the slower will be the process of elimination from the system. Schleich thus made three standard mixtures of the following composition, prepared by volume, not by weight:

Chloroform	45 cc.=1 1/2 oz.	45 cc.=1 1/2 oz.	30 cc.=1 oz.
Sulphuric ether.180 cc.=6	ozs.	150 cc.=5	ozs.
Petrolie ether...	15 cc.= 1/2 oz.	15 cc.= 1/2 oz.	15 cc.= 1/2 oz.

THE AUTHOR'S EXPERIENCE WITH PETROLIC ETHER.

The paper comprising the foregoing points, also my clinical observations made with Schleich's original mixtures in 100 cases, and read before the Medical Society of the County of New York on Dec. 27, 1897, never appeared in print. A rather extensive report of the same, however, can be found in the New York Medical Record, Jan. 8, 1898, furnished by one of the reporters of that journal, who had been present at the meeting. The reason for my not publishing the paper I will briefly mention here:

Schleich's mixtures, as just stated, contain chloroform, ether and petrolic ether, the latter being benzine with a B. P. of 60-65 F. (15-18 C.). Petrolic ether being a substance which I had never heard of as possessing anesthetic properties, I asked Dr. S. J. Meltzer of this city, the well-known physiologist, a few weeks before I presented the above-mentioned paper, to oblige me by making some animal experiments in order to ascertain the action of this agent on the animal organism. In a letter received from Dr. Meltzer, under date of April 13, 1898, he stated: "According to my experiments petrolic ether, as used in Schleich's mixtures, if administered pure, has no narcotizing effect at all, but produces in rabbits and guinea-pigs convulsions, soon followed by tetanus and opisthotonus; if the inhalation be continued the animals die with symptoms of tetanus. If

petrolic ether is administered in combination with sulphuric ether, the resulting paralysis remains unchanged. The conclusion seems justified that if this mixed narcosis were extended the animals would most probably die of paralysis of the respiratory muscles."

Petrolic ether, as stated by Schleich, was added in order to reduce the effect of the chloroform in the mixtures "for the purpose of dilution." The small amount of petrolic ether in these mixtures—1/16 to 1/8 per cent. of the entire volume—explains, it seems to me, why those who had employed Schleich's anesthetic mixtures did not meet with deplorable accidents in some of their patients.

Shortly before I received Dr. Meltzer's communication, my friend, H. P. Weidig, Ph.D., of Newark, N. J., an expert chemist, found, on analyzing these mixtures, that they contain a permanent nucleus—a chemical combination of chloroform and ether according to their molecular weight. Chloroform has a molecular weight of 119.5; sulphuric ether, 74. Thus, 119.5 grams of chemically pure chloroform and 74 grams of absolute sulphuric ether, or, expressed in volume: 43.25 parts of chloroform and 56.75 parts of ether mixed together, enter into chemical combination, which truly represents a new anesthetic. It contains neither free ether nor free chloroform and has a B. P. of its own at 125.6 F. (52 C.). We called this product "molecular solution" (of chloroform and ether), or abbreviated, "M.S."

I would emphasize that this finding of Dr. Weidig's of a true chemical combination of chloroform and ether according to their molecular weight, constitutes a hitherto unknown chemical fact, as it seems, a fact which I consider to be of great practical importance.⁸

Schleich's mixtures, according to Dr. Weidig's investigations, contain this fixed molecular solution of chloroform and ether (M.S.) plus 36 to 53 per cent. (in volume) of free ether, plus petrolic ether, the latter most probably not in chemical combination. Therefore, our patients when subjected to general anesthesia by means of Schleich's mixtures, in the beginning of the narcosis inhale pure ether plus M.S. plus petrolic ether. As soon as the ether and petrolic ether, which are not in chemical combination, have evaporated—and this will probably soon be the case—the narcosis continues with M.S. In other words, in the administration of Schleich's mixtures the anesthetic was adapted to the temperature of the body at the beginning of the narcosis only; soon after the latter was continued with one of a higher B. P., 125.6 F. (52 C.).

THE ABANDONMENT OF PETROLIC ETHER.

These physiologic and chemical facts, established through our efforts here in New York, convinced me of the inadvisability of continuing the Schleich's mixtures for purposes of general anesthesia, and prompted me to withhold from publication the paper I had read on the subject—a paper which had been written for the sole purpose of bringing before the profession the supposed advantages of Schleich's mixtures. On Dec. 27, 1897, I proclaimed these mixtures, on a basis of my personal clinical experience, before a large audience of medical men as "having come to stay," and now, three months later, in view of these absolutely unexpected revelations, I felt in duty bound to abandon their use!

⁶ This is not in accordance with the result of the chemical analysis made by Dr. H. P. Weidig, which see later.

⁷ Conf. author, N. Y. Med. Rec., 1898, p. 607, "Schleich's Mixtures for General Anesthesia."

⁸ It is not claimed, that ether and chloroform form a new body, such as, for instance, acetone and chloroform do. The term "chemical combination" is, used in the sense that the two components, chloroform and ether, dissolved in each other in molecular proportion, will resist fractioning by distillation to the last, i. e., this molecular solution of chloroform and ether has an evaporating point of its own.

However, I parted from them with sincere regret, for I had been charmed with their effect. During sixteen weeks of continuous use in my surgical work in private and hospital practice the narcoses with these mixtures had been so uniformly good that I was convinced that the improvement in general anesthesia, so much sought after, especially in regard to our daily practice, would have to be looked for principally in the direction of physical improvement of general anesthesia rather than in the chemical improvement of anesthetics. I therefore determined to try to find a mixture that would contain neither petroleic ether nor free ether, and yet have a boiling point corresponding to the temperature of the human body.

It was due to the invaluable and continued assistance of Dr. Weidig that I was enabled to successfully pursue the task I had set for myself. During the time of experimentation (the first part of the year 1898) I administered M.S. for general anesthesia and found it to be an excellent narcotic.⁹ I might mention parenthetically that M.S. is still used by a number of surgeons at the German Hospital.¹⁰

THE ORIGINATION OF ANESTHOL.

As stated before, the B. P. of M.S. is 125.6 F. (52 C.). Now, if Schleich's reasoning were correct it was clear that if M.S. could be modified in such a way as to give it a B. P. at 100-104 F. (38-40 C.), such modified anesthetic—being in absolute conformity with Schleich's principles—would be still safer than M.S. and represent at the same time the logical mixture for general anesthesia. After considerable experimenting it occurred to Dr. Weidig to try the admixture of ethyl chlorid, which has a B. P. at 59 F. (15 C.) and M.S. He found that a mixture of 18 per cent. volume of ethyl chlorid plus 82 per cent. volume of M.S. has B. P. at 100.4 F. (38 C.); 17 per cent. volume of ethyl chlorid plus 83 per cent. volume M.S. has B. P. at 104 F. (40 C.); 16 per cent. volume plus 84 per cent. of ethyl chlorid volume of M.S. has a B. P. at 107.6 F. (42 C.).

Considering it unnecessary to make so fine a distinction I proposed that the first and third mixtures be dropped and the second one only be used, viz., 83 per cent. volume of M.S. plus 17 per cent., volume of ethyl chlorid, which has a B. P. at 104 F. (40 C.), thus employing one and the same mixture for all cases. Just at that time the anesthetic properties of ethyl chlorid as such were published by R. Ludwig¹¹ and G. Lotheissen.¹² The success and lack of accidents in the employment of pure ethyl chlorid for general anesthesia, as brought out in these articles, gave me sufficient courage to test Dr. Weidig's new mixture in the living without previously experimenting on animals. This new mixture we termed "anesthol."

THE FIRST USE OF ANESTHOL.

I used anesthol for the first time Oct. 15, 1898, in an interval operation for appendicitis. The narcosis and its sequelæ were all that could be desired, equal to the best I had seen from the use of Schleich's mixtures. Since that time I have used anesthol almost exclusively

in all my operations requiring general anesthesia, in hospital as well as private practice, that is, for a period of nearly four years. The only exceptions were such operations on the face where I deemed pure chloroform preferable.

DESCRIPTION AND PROPERTIES.

Anesthol is a clear, transparent fluid of very agreeable odor; it has a sp. gr.¹³ of 1.045 and a B. P. at 104 F. (40 C.). It is a chemical combination of ethyl chlorid and M.S., not a mixture; for, on evaporating 1000 c.c. of anesthol for five hours at a uniform temperature of 104 F. (40 C.) 22 c.c. (2.2 per cent. volume) with a sp. gr. of 1.262, were left. The sp. gr. of chloroform is 1.490. This fact proves that up to the last moment a "solution of components" discharges and does not leave a final residual chloroform, the narcotic with the highest B. P., as is the case in Schleich's mixtures (Weidig).

The analysis with regard to the actual quantity of each of the three drugs contained in anesthol according to volume, as made by Dr. Weidig, showed that anesthol contains 17 per cent. of ethyl chlorid, 35.89 of chloroform and 47.10 per cent. of ether, representing as will be seen, a proportion of about 1:2:3. It certainly is of interest and worthy of note that the proportion of the renowned English A.C.E. mixture is the same. The latter, however, was constructed in an empiric way, while anesthol is based on scientific principles, being the result of an attempt at adapting the B. P. of an anesthetic chemical combination of chloroform and ether, M.S., to the temperature of the human body. After this had been accomplished on a strictly scientific basis the resulting new anesthetic chemical combination of ethyl chlorid, chloroform and ether (anesthol) was analyzed with the above stated result.

Any one can, of course, prepare anesthol; it is not patented. It is put up in 4, 8 and 16 ounce bottles. It can be had at the principal drug stores.¹⁴

(To be continued.)

SOME NOTES ON AURAL VERTIGO.*

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PHILADELPHIA.

Aural vertigoes have attracted a great deal of attention, especially of late years, yet they constitute a very little known field of our work, while their serious inconvenience or their actual disablement of the patients render them of great practical importance. Like the matter of subjective noises in the head the causation is so multiform that each case presents a problem of considerable difficulty and demands close and discriminating study in order to locate and improve the condition. Advance in this direction has undoubtedly been made by those who have laid stress on the tympanic origin of many of these cases, except when they have ignored or belittled the other elements of etiology and have assumed, because cure has been occasionally reached by

13. I might state here as an interesting fact that the specific gravity of anesthol is very near that of the human blood, viz., 1.056-1.059, certainly nearer than that of any other anesthetic in use.

14. Personally, I have always procured anesthol of Messrs. Chas. Cooper & Co., 194 Worth St., New York, of which firm Dr. H. P. Weidig is a member. It is prepared under the latter's personal supervision. Its purity and correct composition are guaranteed. In order to insure results that will be of value in drawing conclusions from the observations of others, I would strongly urge that anesthol of this manufacture only be used.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, C. R. Holmes and G. H. Makuen.

9. Conf. N. Y. Med. Rec., April 23, 1899, p. 607.

10. Braun of Leipzig favors a mixed narcosis of ether and chloroform, both administered at the same time, but each individually, by means of a special apparatus, not, as we did, both at the same time in chemical solution on one mask. (Report of Congress of German Surgeons, Berlin, 1901.)

11. "Ueber Narkose mit Aethylchlorid," Beitr. z. Klin. Chir., vol. xix, p. 639, 1897.

12. Arch. f. Klin. Chir., vol. lvii, p. 865, 1898. See also: M. W. Ware, "One Thousand Personally Conducted Cases of Ethyl Chlorid Narcosis," paper read before the Section on Surgery and Anatomy, of the American Medical Association, Saratoga, 1902. THE JOURNAL A. M. A., Nov. 8, 1902, p. 1160.

procedures directed to the tympanum, that no labyrinthin cases exist. "Menière's disease" as a distinct entity has certainly suffered much eclipse of late years and our views on the subject have expanded; but the narrowness of view, which would exclude it wholly from consideration as a complex of symptoms due to labyrinthin involvement, is certainly little calculated to advance the general understanding of the subject.

Especially since the grippe epidemic of the last ten years cases of labyrinthin involvement have been not infrequent, and a history such as that of the following case can leave little doubt as to the nature of the lesion. A trained nurse, 25 years of age, awoke one morning after a period of entire health to find herself too dizzy to lift her head from the pillow, falling back helpless at the effort and becoming nauseated by the rotation of everything about her. The left ear was totally deaf, without discharge, pain or other involvement. The condition grew better after some days in bed and at my first examination I found only moderate vertigo and no hearing on the affected side for any tone from the lowest to the highest. Under alterative measures she speedily recovered and was able to resume her duties. Her hearing returned for all notes of the Galton whistle (some 40,000 down to 4,000 double vibrations per second), but below this point she remained absolutely deaf to all tones and was therefore unable to hear any speech in this ear. No evidence of tympanic disease was at any time present and the lesion was probably hemorrhagic and undoubtedly in the upper turns of the cochlea.

Politzer¹ says: "For the differential diagnosis between the labyrinthin form of Menière's symptom-complex and that due to middle-ear affection, the tuning-fork tests are of importance. If the Rinne test is positive in advanced defect of hearing, the duration of perception of the fork-tone through the bone shortened, the loud watch-tick unperceived by bone conduction, while deep tones are well heard by air conduction, no doubt underlies the diagnosis of a labyrinthin affection."

It is in these labyrinthin cases that our testing of hearing by tuning forks and other methods must be complete and precise, and in these, therefore, the limitations and uncertainties of these tests will come most conspicuously to notice. The tuning forks may elicit contradictory and valueless responses from our patients and show the fallibility common to subjective tests; yet the judicious employment of a sufficient variety of tones should bring the matter fairly within the control of the examiner and explain or eliminate many of the contradictions. Those who have employed but a single fork and endeavored thereby to discriminate between tympanic and labyrinthin affections are generally confessedly unable to afford us any clear criteria for their views, which they claim empirically to have verified; but this must not discourage us from the more thorough study of the range of hearing and the relation of sound conduction by air and by bone as a means of learning the truth in these matters and better deciding our lines of treatment.

The severe cases of aural vertigo are certainly rare and the number seen even in extensive practice will always form but a poor basis for any sweeping dicta as to the general subject; and the differences which are encountered by different men will always present illustrations of the two sides of the shield and the importance of the point of view of the observer. It will fairly define my own position if I say that in the past ten years

I have been seeking cases suitable for relief by intra-tympanic operation, and in upward of a hundred cases have met but a single one in which I could feel justified in operation for the relief of pressure on the stapes, and this in a woman of utterly neurasthenic type, who was notably relieved at first by catheter inflation. She has been anything but a brilliant example of the benefits of operative treatment, and would probably have been as much helped by the anchoring of her floating kidney as she claims to have been only after months by the operation on the incus. In the great majority of the cases of vertigo which have come under my observation neurotic and general vasomotor influences have seemed largely at fault for the symptom, except in the considerable group in whom the catarrhal affection of the eustachian tubes and tympanum was so clearly at fault that treatment by the catheter directed to this condition could be fairly expected to give the relief which was obtained.

In the neurotic individual benefit by the catheter may be at first also notable; but the strain of its employment tells unfavorably on their impaired physique, and continuance of the procedure is unwise or detrimental. Its influence must, therefore, be considered similar to that of any impressive measure whether operative or not, and to whatsoever part directed, and is ascribable more to emotional shock than to any physical or physiologic change of relations.

It is as to the third group of generalized vasomotor conditions that I feel that I may offer some suggestions rather constructive than destructive. Some of these cases present a nearly typical Menière attack, with tinnitus, vertigo, deafness and unconsciousness; but some of the worst instances lack one or the other of the most characteristic elements and the impression has a transitory character, which excludes all probability of notable physical change. Even the serous exudation into the labyrinthin structures, which Gruber has urged as the causation of many aural vertigos, can hardly be assumed for conditions which are so sudden in onset and so immediate in recovery; and the perfect hearing which persists in some of these cases, although the attack is severe enough to fell them as though struck by a hammer, raises the question as to whether the lesion is not wholly central. Its vasomotor causation is rarely in doubt and moderate arteriosclerosis is fairly discernible in most of these cases. The therapeutic test well bears out this view of their etiology, and medicaments directed to improve the vascular condition, the iodids and other absorbents, strychnia, quinia and other vascular tonics, but especially the adrenal extract, have given me a notable gain in many of these cases which had proven stumbling blocks to previous attendants. Combination of the various elements is to be expected in many cases, and our therapeutics and regimen must be judiciously directed to the needs of the individual; but I desire particularly to direct attention to the value of adrenalin for the forestalling of these attacks and building up of that self-confidence which is often so seriously impaired in the subject of such a disorder. It is needless to go into any disquisition on the physiologic effect of this potent addition to our remedies, nor is it needful to point out its usual antagonism to nitroglycerin and the need for tentatively employing these opposed medicaments quite empirically in some instances. Yet it may be generally laid down that in the cases of marked vertigo of transient and otherwise undeterminable causation the adrenal may be expected to steady the circulation of the premonitory phase of the

1. Text-Book, Fourth Ed., p. 601.

trouble and prevent the occurrence or greatly abate the severity of the vertiginous attack. Its cautious employment for this tonic as well as prophylactic effect has been most happy in a number of cases which had yielded to no other line of treatment and in some of which the experimental use of nitroglycerin had greatly increased the disturbances.

I would recommend, therefore, that in all cases of vertigo coming to the otologist he should employ minute methods of study as to the tympanic and labyrinthine condition, but also investigate personally or through the aid of a judicious physician all the general aspects of his patient's case. He should exclude or relieve all involvements of the accessory nasal cavities, investigate the refraction and muscular relations of the eyes, as well as learn whatever teaching may be given him by the eye-grounds and, abating nothing of the local treatment by inflation and massage, which the aural condition may seem to demand and using strychnia and other tonics according to the general needs of the patient, he may yet employ as a direct and almost specific means of treatment this vigorous vascular tonic, which has been given us in the adrenal extract.

DISCUSSION.

DR. GEORGE L. RICHARDS, Fall River, Mass.—I have at the present time a troublesome case of aural vertigo, which illustrates one phase of which the Doctor spoke. This man improved for a number of weeks under the catheter and aural massage in connection with such general treatment as was given him by his family physician. But now the period of improvement seems to have passed, and I am not apparently doing him any good. Given a sudden change of temperature from warm to cold and an attack may come on at any time. He is better under continuous warm weather, and he has gone south for a number of winters. Our New England temperature is so changeable that he has never dared to go away from home without taking his wife or daughter with him, for several years, for fear of being overcome with an attack when alone.

DR. C. H. BAKER, Bay City, Mich.—I think the author of the paper made the statement that a case he mentioned was probably hemorrhagic and that the lower tones were lost so that the patient did not recover the power of hearing speech, and I think he gave that as an indication that the hemorrhage was in the upper convolutions of the labyrinth. I was under the impression that the destruction in the lower portion of the labyrinth causes impairment of the lower tones and that the higher tones are disturbed by the involvement of the upper portion. As to the case mentioned by the last speaker, the effect of sudden lowering of the temperature would be to raise the blood pressure by contracting the arterioles, and there I would think adrenalin would be contraindicated, since it would practically do the same thing, and nitroglycerin, from theory, we would expect to be more beneficial. The most distressing case of this disorder I have seen occurred in a man so youthful that it could hardly be thought of as a case of arteriosclerosis. Before the vertiginous attacks began he had symptoms of tinnitus, without impairment of hearing. He has now apparently lost the hearing. The bone was apparently undergoing hyperplasia and filling up the canals, the pressure destroying the activity of the nerve elements.

DR. RICHARDS—In my case, the patient always had nausea with the attacks.

DR. SARGENT F. SNOW, Syracuse, N. Y.—I wish I could have heard this paper before, for I had a case last summer in which I believe adrenalin would have been of much temporary benefit, which probably is all the Doctor hopes for from its use. The chief thing to think of is the removal of the cause, and eustachian destruction is often the main factor of these vertigoes. In the last year I have had two cases. In one case, a woman, the only abnormal condition I could find was some enlargement of the middle turbinates. She could not

stay for prolonged treatment, but could have some operative work done. Removal of the turbinates was followed by a cure, and there has been no return. The other case was a man, about 55 years of age, with such intense vertigo that at times he had to be led about the street. He also had obstructed eustachian tubes. I removed the turbinates without avail. Looking further into the condition of the man, I found the whites of the eyes very yellow and the other general appearances that go with a torpid liver. I could get no results that remained at all constant until his liver was aroused. At first I gave him a good sized blue mass pill twice a week and later every week. The eustachian tubes in this case, as well as the first, were obstructed, but this has now cleared up.

DR. GEORGE M. CASE, Elmira—I think Dr. Snow has well represented the condition of affairs. We have not only to look to the local conditions but also to the constitutional conditions. My experience in the treatment of aural vertigo is that you will often find a toxemia or a lithemic condition. A great many of these cases would be relieved by the combined treatment. If we attempt to cure them by only relieving the stenosis of the nose and eustachian tube, we will often fail. It is noteworthy that in many cases of tinnitus and vertigo the constitutional condition is an important factor. In the great majority of cases in plethoric patients I use pilocarpin. Of course, I suppose adrenalin might take the place of it as a temporary expedient.

DR. C. R. HOLMES, Cincinnati—This is a subject of great importance, because we encounter it so frequently. I have had a few cases of severe vertigo. In fact, I have the records of three cases with epileptoid seizures, which were entirely relieved by opening the eustachian tube. One man, in particular, who was entirely deaf from childhood, began having these attacks. On his way to Cincinnati he had two attacks. While sitting in the car he slipped off the seat. He had attacks similar to those of epilepsy, but without the biting of the tongue. They were relieved by opening the eustachian tubes, but they recurred until the general condition was looked after. I now never undertake the treatment of a case without going into the patient's manner of living, to find the conditions that it may be necessary to correct, such as the method of living, eating, drinking and clothing. I have printed, for the benefit of my patients, slips, which I hand to them that they may not need to ask me a lot of questions, the answers to which they will forget. I give these slips to all my nasopharyngeal and aural patients. I think the general treatment is of vast importance.

DR. J. C. BECK, Chicago—I have in mind one case of aural vertigo in which no trouble was found in the nose or throat. I could clearly obtain the history of specific disease. The patient does not need to reach the usual age of arteriosclerosis to have that condition after syphilis. We find many cases of vertigo are syphilitic in nature, and, therefore, constitutional treatment is certainly called for. Iodid of potassium and the thorough use of mercurial inunctions cured my case.

DR. B. A. RANDALL, Philadelphia—When my paper is read I think the gentlemen will note that the constitutional conditions are fairly gone into, and that I am almost as bad as Haig in attributing to gout and the uric acid diathesis every ill that flesh is heir to. The point made by Dr. Snow is good, that the effect from the adrenal is temporary; but it is often important to get the effect quickly, even though only temporarily, to meet the crisis that is imminent in these cases. We may give the adrenalin chlorid if the aura is very short and no time remains for the slower absorption of the powder, but otherwise the desiccated adrenal or its solution should be used, for with it a more prolonged effect can be secured. If we contract the vessels with adrenalin we may expect some reactive expansion in most cases, and we must meet this with strychnia and other tonics. But the promptness with which the adrenalin can act in the stage of aura or prodrome, which is recognized in not a few of these cases, enables us to permit them to walk abroad like free men and women and that is no small gain. As to nitroglycerin, it is distinctly indicated in some of the very flabby neurasthenic cases, who will improve very much

under its employment and lose the dread of vertigo. But, on the other hand, one of my patients, a gentleman who seems to have been so pleased with the effect of the adrenal that he has been sending me patients ever since, was apparently made worse by the employment of nitroglycerin. He is distinctly neurotic. He is one of the type who can ride in an automobile or trolley without catching a cold, but is stuffed up at once when he rides behind a horse. Of course, these cases are known, but they are relatively rare. Whether these cases are rheumatic or due to some other intoxication, they are subject to easy impression, and the use of adrenal is of special value.

I need hardly answer the point raised as to the structure of the cochlea, which entails the disputed Helmholtz theory and is one of the paradoxes of the auditory apparatus, of which we have so many. In the first turn of the cochlea, where the tube and the expansion of the bony lamina is at its broadest, the basilar membrane of the cochlea is at its smallest. Where all the other parts of the cochlea are smallest, the fibers of the membrane are longest, and here at the apex the lower tones are heard, while the high tones are heard in the lower portions of the cochlea.

TRANSILLUMINATION OF THE NASAL ACCESSORY SINUSES DURING ACUTE CORYZA.*

CAROLUS M. COBB, M.D.
BOSTON.

Transillumination of some of the accessory sinuses has been one of the stock tricks of traveling showmen for many years, and in every village where they exhibited a few of the more daring boys learned to make "fire come out of the eyes," and were a decided nuisance with it until something else took up their attention. That a lighted taper held in the closed mouth would, under proper conditions, illuminate the pupils of the eyes has probably been known for many years, but it was not known that the phenomenon was of any practical importance as a means of diagnosis until Voltolini of Breslau published the results of his experiments in 1888. In 1889 Heryng of Warsaw elaborated these experiments and placed transillumination on a practical working basis. Brown Kelly of Glasgow first called attention to the fact that the rays of light entered the eye and could be perceived by the patient. This was in 1892, and his observation was shortly followed by similar ones by Garel of France and Burger of Germany. Davidsohn called attention to the fact that if the eyes were opened during the experiment a dull red reflex could be seen in the pupil, and in a scientific way we have made useful, as a means of diagnosis, the trick of the traveling showman which was copied by the small boys of making "fire come out of the eyes."

In transillumination of the antrum of Highmore the rays of light pierce the hard palate, and first enter the nasal chambers and from there through the external nasal wall to the antrum, and then through the roof of the antrum, which is the floor of the orbit, and then the coats of the eye, and so become visible as a dull red reflex in the pupil. It is evident that this is the course of the light, for in a vast majority of the cases the floor of the antrum does not extend over the hard palate far enough for the rays of light to enter it directly. The floor of the antrum is generally just above the alveolar process, and therefor light would meet with less resistance in following the route as given above. The course of the light leads to a source of error which we will call attention to later.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, C. R. Holmes and G. H. Makuen.

MEANS OF ILLUMINATION.

To obtain satisfactory results it is necessary to have a dark room and an electric lamp of sufficient candle power. The dark room is generally easy to get, but it has been my experience that it is not so easy to obtain electric lamps of the requisite candle power. When I first began to transilluminate the sinuses I was not at all satisfied with the results which I obtained, and during my investigation to find the reason for my unsatisfactory results I took my lamps to the General Electric Company and had the candle power measured. I found that lamps which I had bought as two and four candle power were all less than one, and some of them of less than one-half candle power. I have had the same experience when I have bought lamps of instrument dealers, until I have come to the conclusion that they make no effort to ascertain the candle power of the lamps which they sell. One reason for the lack of illuminating power of the lamps ordinarily sold for this purpose is that they are too small and it is absolutely impossible to get sufficient light from these toy lamps. Lamps of sufficient power can be obtained from reliable manufacturers of electric lamps, but they are quite likely to sell you what you ask for, and if you demand a small lamp you will get as efficient a lamp as can be made in that size, but probably it will not be what you want for the work. Even if it is fairly satisfactory for a time, it will soon lose its efficiency and be worse than useless because the results obtained will be unreliable.

TECHNIC.

The technic of transillumination of the accessory sinuses is very simple, provided that you have lamps of sufficient candle power, and by its use we may get confirmatory evidence in regard to the condition of the antrum and frontal sinus. We can compare the two sides, and, what is of more importance, we can compare the condition of the sinuses, as shown by the light reflex, at different stages of an acute attack. The method which I have used for transillumination of the antrum is to have the patient hold a four or five candle-power electric lamp in the closed mouth, being particular to have the lamp held as nearly horizontal as possible. If the antrum is healthy this will usually give the light crescent under the lower lid and the red reflex in the pupils. I have not had sufficient experience with the method of Escat to form an opinion of its merits. His method, briefly, is to carry an electric lamp protected by a metal funnel, to the outside of the antrum, between the cheek and the external wall of the antrum. It is claimed for it that it gives the same results as the other method, and that it overcomes a source of error, i. e., the obstruction to the passage of the rays of light caused by growth, hypertrophies or deformities in the lower meatus. The frontal sinus is illuminated by pressing a small electric lamp, protected by a hood, against the inner angle of the orbit, just below the superciliary ridge. All of the members of this Section are perfectly familiar with the sources of error in transillumination, and I shall call your attention to only one, which can, with a little care, ordinarily be overcome. The one to which I allude is the effect that blocking of the lower meatus may have in preventing the passage of the rays of light. Obstruction in the middle or superior meatus does not have so much and often not any influence. If the obstruction in the lower meatus is of a permanent nature the question of removal is to be considered, but temporary congestion can be removed by

the application of adrenalin, and I have found it an advantage to use it if the congestion is at all marked.

CLASSIFICATION OF CASES.

What diseases may extend to the nasal accessory sinuses and what proportion of the cases of inflammation of the nasal chambers, from whatever cause, are accompanied by involvement of the accessory sinuses, is a question of the utmost importance. I have to report the results of some work which I have done in transillumination of the accessory sinuses during the course of acute coryza. These results are, of course, subject to all the sources of error that may be encountered in transillumination in general, and the conclusions to be drawn from the findings can be accepted only subject to this element of doubt. I have transilluminated 30 cases of acute coryza, and I shall not weary you with a detailed account of each case, but rather divide them into classes or groups. This division is, to a certain extent, arbitrary, but will serve to study the condition.

Under the first group I have included all of the cases that were seen during the first twenty-four hours of the beginning of the acute coryza. There were six of these and transillumination gave negative results, although two of them later on in the course of the disease gave a shadow in one antrum. Two of them I did not see again, and in two of them the antrum and frontal sinuses remained clear.

The second class includes those cases which were seen during the later stages of the attack, or rather the cases in which the attack persisted longer than the usual cold and gave discomfort enough so that the patients sought relief from special treatment. These cases were originally more severe than the ordinary cold, or had become so by neglect or exposure. There were five of these and in two the antrum and frontal sinuses were clear, one gave a dark shadow in one antrum and one in both, and one had one frontal sinus that was dark.

The third class includes those who had pain either in the face or head. All but one of these cases had that peculiar form of headache that usually begins about 9 or 10 a. m. and continues with more or less severity for 5 or 6 hours and then disappears completely until about the same time the next day. If the pain is unrelieved it may come earlier on succeeding days and last later until it is nearly continuous. It is known under various names, such as hemicrania, brow ache, sun headache, etc. In the four cases which had this pain I found the antrum dark on the same side as the pain. I was surprised to find the frontal sinus invariably clear. I fully realize that four cases do not furnish sufficient data from which to draw conclusions, but I certainly feel that even this number of cases may stimulate others to continue the research. At present we can only say that it is interesting and, while it may be merely a coincidence, it may, on the other hand, lead to some definite knowledge of this class of headaches and in this way be of benefit to our patients. The other case was interesting from the fact that he had had a variety of diagnoses made of his disease. The pain was diffuse over the left side of the head and in the back of the neck, and he was told at first that he had beginning typhoid fever, later that he was suffering from eye strain, and after he had had his eyes examined and glasses gave no relief, that he was suffering from brain fatigue. He then consulted Dr. C. E. Meader of Lynn, Mass., who suspected the true cause of the pain and sent him to me for transillumination. I found the left antrum dark and treatment to improve the nasal drainage gave him relief from his

pain, although it was several weeks before the antrum was entirely clear.

The fourth group includes the cases which had otitis media as a complication during the course of the acute coryza. There were fourteen of these and they were of the usual severity. In ten of these cases one or both antra were dark on illumination. In many of the cases the ethmoid cells were also involved, but the frontal sinus was very rarely dark on transillumination. As a matter of fact, in all of the thirty cases the frontal sinus was involved alone in only one case. I do not wish to be understood as claiming that all cases of otitis media have also involvement of the nasal accessory sinuses, but what I have found in these cases is that if the otitis media exists as a complication of acute coryza the nasal sinuses are likely to be involved. It does not seem surprising that the nasal accessory sinuses should be involved if the infection is severe enough to affect the middle ear, because the ear infection can only result from the disease extending a much longer distance than would be the case in involvement of the accessory sinuses. All of the explanations that are given for the extension of the inflammation to the middle-ear cavity apply with equal or still greater force to the extension of the disease to the nasal accessory sinuses. All cases of otitis media which did not originate as a complication of an attack of acute coryza have been excluded, and I have made no attempt to find what proportion of the cases of otitis media originate in this way. I have no theories to advance, but have confined myself to a statement of the facts which I have observed, and while it may be possible that I have had an exceptional series of cases, still I can not help feeling that, under ordinary circumstances, we shall find the nasal accessory sinuses involved in a much larger percentage of these cases than we now believe to be the case.

SUMMARY.

In closing I wish to call your attention to the following summary:

First, that to do satisfactory work it is necessary to have lamps of much greater candle power than those usually sold by instrument dealers.

Secondly, that it is rare to find the accessory sinuses dark on transillumination during the early stages of acute coryza.

Thirdly, that during the later stages of a prolonged attack it is the usual result to find one or more of them dark.

Fourthly, that hemicrania is often closely associated with antrum disease.

Fifthly, that it is almost the rule to find one or more of the nasal accessory sinuses involved when the ears are affected during acute coryza.

DISCUSSION.

DR. ALLEN DEVILBISS, Toledo, Ohio—I believe my failures—to a considerable extent—in getting transillumination have been for the very reasons Dr. Cobb has stated. I shall certainly try a stronger light. His ideas of voltage are good.

DR. B. A. RANDALL, Philadelphia—I wish to claim the priority in this matter for a Philadelphia man. In the Pennsylvania state medical meeting of 1885 was the first time I saw it, but Dr. Addinell Hewson had demonstrated it before that time. He then showed points that are still too much ignored. Dr. Cobb has spoken of the difficulties of darkening. Hewson made use of a small hood, something like that used in the stereoscopic apparatus or like an inverted fluoroscope, and, placing that between his own face and the patient's face, he could demonstrate everything as well in a bright room as if it were all dark. It is a convenience to remember that

a photographic dark cloth, preferably of velvet, is all that is needed to give the darkness required for this examination. These simplifications are of very great importance, because they will lead us often to make the examination when otherwise it would be passed over. One objection to the large lamps, which otherwise are strongly to be approved, is that they are inconvenient to hood. I use habitually a small lamp and, with the aural speculum, you can get transillumination of the frontal very nicely. You also can transilluminate the anterior ethmoidal cells to a large extent by throwing the light through the bridge of the nose.

The essential point that Dr. Cobb has made is that if we want to get many of our pieces of apparatus right we must go to the commercial men, who are in close competition. All kinds of batteries, with all sorts of claims not borne out in the least, and all sorts of lamps are on the market. We must have better apparatus, that will stand the fire of commercial competition. We can go to the general electric companies, if necessary, rather than to the regular instrument makers, to get pieces of apparatus that are satisfactory. One further clinical point. When I have suffered, myself, with an acute filling of the antrum of Highmore there is, ordinarily, at first no dimming of the transillumination. But on one occasion I remember being a little stuffy and greatly inclined to sniff in order to clear my head, and every time I did so I would feel the tension provoked by the rarefaction of air. The sinus that was at first clear, became suddenly dark. We read of cases of polypi of the Highmore. The mucous membrane of the Highmore can puff up with edema to an inch in thickness, which is not polypoid but edematous, and this may disappear in a short time. This is due frequently to error on the part of the patient, through trying to clear the nose by sniffing, thus producing suction, rather than by blowing out the mucus. The normal delivery of the fluid secreted within is really a matter of evaporation and the moist air is carried away. In normal respiration there is sufficient exchange of air in the sinuses. I believe, to all intents and purposes, the ear is an accessory sinus in the same sense and is to be so regarded in all coryza cases. The ordinary tidal respiration produces a certain ventilation that is desirable. I know I have saved patients a good deal of discomfort and possibly more than mere temporary suffering by directing them to avoid this sniffing with its rarefaction of air in the nasal chambers, when the mucous membrane was ready to take on changes quickly through vasomotor and other influences.

DR. CHARLES H. BAKER, Bay City, Mich.—This paper is a very timely one and very suggestive. In the matter of lamps there has always been great difficulty. The lamps which have been put on the market, the small lamps particularly, have been nearly always below the candle power at which they are rated. I have secured recently some lamps, smaller than the ones here, which are suitable especially for transillumination between the cheek and the jaw. They are of low voltage and they were very cheap, so that if I did burn them out they could be readily replaced. The Doctor spoke of the transillumination of the cheek and the supramaxillary fossa, but said, I believe, that he had not used it much. I believe it was at Columbus this same subject came up, and it was strongly urged that transillumination be made through the retromaxillary fossa. The following week I found a case, in which transillumination through the mouth showed no difference, apparently, but on transilluminating through the retromaxillary fossa there was considerable difference between the two sides. Following the suggestion made at that meeting, I operated through the canine fossa and I immediately got a purulent discharge, showing that the lamp had done its work satisfactorily and had enabled me to make a correct differential diagnosis. The device which I have used for operating these lamps is as follows: I have the alternating current and the alternating current controller. The usual light current received in the building is passed through a coil of moderately heavy wire, and over this is a coil of very much coarser wire, and I can regulate the current so that the voltage is lowered and the amperage increased. With this you can illuminate any

lamp, from the small dental lamps to the ones here exhibited. If you have such a current, you will find that form of controller the most satisfactory. It is certainly better than any form of battery, in that it is permanent and always ready when the current is flowing. It is a great satisfaction to the surgeon to be able to demonstrate whether the sinus is involved in acute coryza, and it is important to know whether you have the sinus involved at all. In the headaches coming on periodically, say at 9 or 10 o'clock, and continuing until 3 or 4 in the afternoon and increasing in severity until perhaps an hour before they disappear, the form of the headache is almost diagnostic in itself. In a number of cases this peculiar headache has led me to the diagnosis of the condition. The relief of the obstruction of an involved sinus has led to the cure of the headache and also to a cure of the disease.

DR. D. A. KURK, Richmond, Va.—I would like to ask Dr. Cobb, could not the tuning fork be used as a subjective test, in addition to the transillumination? Suppose we have a heavy, dense bone, instead of a cavity, would the tuning fork reveal a difference, depending on the conduction on the affected side?

DR. C. M. COBB, Lynn, Mass.—I see no reason why the tuning fork should not be used as a method of confirming the diagnosis. I have made no claim in regard to what might be in the sinuses, as to whether they are filled with a fluid or with a swollen mucous membrane. But one point needs emphasis, and that is that all of these cases do not need operation. A much larger proportion of them will get well than in cases of acute otitis media. They recover by a process of resolution in probably nine out of ten cases and the antrum will become clear. They will always be helped by increasing the drainage. It is the rule for them to recover spontaneously.

AN UNUSUAL CASE OF NASAL SYPHILIS IN A CHILD AND A CONSIDERATION OF SYPHILITIC NASAL TUMORS (SYPHILOMATA).*

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The consideration of syphilitic affections of the nose has always been of such interest that another paper on the same subject needs no apology, even though no new ideas can be advanced. Syphilitic conditions involving the nose at times take on very unusual forms, and very often do not in the slightest degree follow the classical picture described in the text-books. This is particularly true of late tertiary lesions. Tertiary manifestations, such as broken-down gummata, destructive ulcerative processes and caries followed by the well-known deformities, are, of course, very common, and are usually easily recognized. This is not so, however, when the tertiary lesion takes the form of a tumor—a syphiloma—particularly when no history of syphilis can be obtained. This form of the disease will be the only one considered in this paper.

A considerable number of cases of tertiary nasal syphilis have come under the writer's observation, and among them there were three in which the only manifestation of the disease was the presence of tumors in the nose. In two of the cases they were attached to the septum and in one the tumor sprang from the inferior turbinate. By these tumors I do not mean the usual gummata or granulomata, which almost invariably break down if the patient does not promptly receive anti-syphilitic treatment, but distinct new growths

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, C. R. Holmes and G. H. Matman.

covered with an intact mucous membrane and not showing any tendency to ulceration. The following case demonstrates very well the fact just mentioned and the difficulties that are sometimes met in making a correct diagnosis.

CASE 1.—About a year ago a boy, aged 7 years, was brought to one of our clinics for nasal treatment. The mother, a French-Canadian, and not a very intelligent woman, gave the following history of the child's illness: During the past eight or nine months he had been breathing very badly, and this difficulty in breathing had increased very much during the past two or three months. He had lost weight and slept very badly, in fact had to almost sit up in bed during the night.

Examination.—On examination of the nose, we found both nostrils completely occluded by tumors springing from the septum, and about the size of small cherries. There were two tumors in each nostril, one of which had a distinct pedicle and looked rather like a papilloma. They were fairly firm to the touch, of slightly irregular shape, grayish in color, but covered with an intact mucous membrane, which showed absolutely no evidence of ulceration. Examination of the pharynx and larynx showed normal conditions, with the exception of slightly enlarged tonsils. He had been treated for a number of weeks in the eye and ear clinic of the hospital for a severe, right, dacryo-cystitis. Externally there was a small fistulous opening on the cheek, about an inch below the lachrymal sac, communicating with it, and discharging pus. The boy was very anemic and had a severe reflex asthma. Examination of the urine and sputum gave negative results. After carefully questioning the mother we discovered that her husband had died of tuberculosis, and that she had lost a sister by the same disease, but we could at this time obtain no history of syphilis. It was positively denied.

Treatment.—The boy was given Fowler's solution, and treated locally for a time, because the mother objected to operative procedures. His condition finally became so pitiable and the asthma increased to such an extent, that we were allowed to operate. Under ether, both nostrils were thoroughly cleaned out. Careful examination with the probe during the operation failed to reveal the presence of caries. He improved very much for a time, but within two months both nostrils were again completely obstructed. The mother then finally admitted that her husband had acquired syphilis, and that she had been infected before the birth of this child. There being now no doubt of the diagnosis, the boy was given potassium iodid and began to improve at once. Within two months he was practically well, the nasal tumors and the asthma having entirely disappeared. We saw him from time to time during the next six months, and both nostrils remained entirely free.

Histologic Examination.—Portions of the removed growths showed that the tissue was made up of round cells, with here and there cells similar to spindle cells. There was also a connective tissue formation, and thickening of the walls of the blood vessels. Tubercle bacilli and tubercles were not present. This examination, with the result of the treatment, made the diagnosis of syphiloma positive.

The case, I think, presents some very unusual features. Here was a boy with congenital syphilis—the only indication of the disease being the presence of the nasal tumors—who had never before received anti-syphilitic treatment, and nevertheless the nasal growths at the time he was examined showed no evidence of breaking down. This one fact, without the histologic examination, is enough to prove that they were neither gummata nor tuberculous granulomata. Another interesting point is the distinct pedicle that one of the tumors had and the presence of the syphilomata in both nostrils. In most of the cases of nasal syphiloma the tumors are confined to one nostril. One of Frank's cases was also an exception to this rule. I would very briefly like to refer to two other cases, observed during the past few years:

CASE 2.—Mr. G. S., aged 36, married and the father of healthy children, consulted the writer in May, 1897, for what he thought was a "cold in the head." His family history was excellent, there having been no cases of either tuberculosis or syphilis. The patient had had a chancre some years before I saw him, but had not had any other symptoms of syphilis.

Examination.—The sputum and lungs were negative. The posterior nares, pharynx and larynx showed normal conditions. A growth the size of a walnut, firm to the touch and showing no evidence of breaking down, was present in the right nostril, and was attached to the septum.

Treatment.—This was removed with a snare, and the seat of attachment thoroughly cauterized. Recurrence after three months. The patient was then put on iodid of potash, and recovered completely, the tumor entirely disappearing and not recurring.

Histologic Examination.—As in the last case there was a connective tissue formation and thickening of the walls of the blood vessels, but a considerable number of tubercle bacilli and giant cells were also present.

An examination of the patient's nose four years afterward showed that both nostrils were in a normal condition. There was no indication in the right nostril of a return of the growth, and examination of his nasopharynx, larynx, pharynx and lungs was also negative.

In this case the histologic findings, with the exception of the endarteritis, would speak rather more for a tuberculoma than for a syphiloma. The absence of any ulceration, however, and the rapid disappearance of the tumor when iodid of potash was administered make the diagnosis of a syphiloma positive, I think. Giant cells as shown by a number of writers (Kuttner, Browicz, Manasse) are sometimes present in syphilitic tumors. The presence of tubercle bacilli in this tumor is of considerable interest, because it has been claimed that they are never found in syphilomata. Tubercles with cheesy centers were not found.

CASE 3.—The last case of my own, which I wish briefly to mention, is that of a man, aged 58, who consulted me March 1, 1901, for nasal obstruction. For several months he had not been able to breathe at all through the right nostril, and he had suffered a great deal from headache. I had removed polypi from his nose several times, and thought, of course, that he was suffering from a recurrence of the same condition.

Examination.—On examining the nose, however, I discovered a large tumor completely filling the right nostril, and apparently springing from the inferior turbinate. It had an irregular surface, was firm to the touch, and had an intact mucous membrane, with the exception of two or three small superficial erosions, but there was no evidence of any breaking down. The glands on the same side of the neck were somewhat enlarged, and the right cheek in the region of the antrum was very hard and much swollen. I told the patient that I could not make a positive diagnosis without removing a piece of the growth for examination. I really thought, however, from the appearance of the growth and the patient's age, that it was probably a sarcoma, having its origin in the antrum of Highmore. Most of the tumor was removed with the hot loop and examined by Dr. George Blummer of the Bender Laboratory, who reported that it was not malignant, but that it was a granuloma and probably a syphiloma. The histologic findings were the same as in the first case reported. The patient now admitted that he had had a chancre five years before.

Treatment.—He was given iodid of potash, and what was left of the tumor rapidly disappeared, every trace of it subsiding within six weeks. There has been no recurrence since that time.

Syphilitic nasal tumors of this kind are certainly of a distinct and unusual type, and belong in a class by themselves. The term syphiloma, first given to these tumors by Wagner, although objected to by no less an authority than Virchow,¹⁸ is, I think, a good one, because, as will be brought out in the differential diag-

nosis, they are not exactly the same as syphilitic granulomata, and they are certainly not gummata. Kuttner,¹⁵ in his able article on nasal syphiloma, has reported four cases of this kind, of which I will give brief abstracts.

CASE 4.—Woman, aged 33; no history of syphilis. In the right nostril grayish-red tumor masses, attached to the middle turbinate. On microscopic examination, walls of the vessels were found thickened. Recurrence after removal. Anti-syphilitic treatment and cure. No recurrence after nine months.

CASE 5.—Woman, aged 42; no history of syphilis. Large tumor in right nostril attached to septum. Microscopic examination of removed portion negative. Recurrence after removal. Anti-syphilitic treatment followed by cure. No recurrence after six months. Giant cells were present in large numbers.

CASE 6.—Woman, aged 31, who some years before had been infected with syphilis. Small tumor attached to inferior turbinate, right nostril. Microscopic examination showed presence of giant cells and thickening of vessel walls.

CASE 7.—Woman, aged 28. Right nostril filled with hard, red tumor masses attached to septum. No history of syphilis. Microscopic examination the same as in the other cases.

Ripault¹² has also reported a case. Manasse⁷ has reported five cases of the same nature from Kuhn's clinic, based on careful microscopic examinations. In his cases the tumors also had smooth surfaces and seldom showed any indication of ulceration. According to his conclusions they may occur singly or they may be multiple, and are usually attached to the septum. Their color is grayish red. They may be attached by a pedicle or may have a broad base. They were composed of granulation tissue and round cells, which were separated by very little intercellular substance. In a number he found giant cells, but never real tubercles with cheesy centers nor tubercle bacilli. He considered them connective tissue tumors arising from the submucous connective tissue, and very similar to tuberculomata, from which they differ by the absence of tubercles with cheesy centers and bacilli. Thickening of the arterial walls speaks for lues, but Chiari¹⁷ has found this in nasal tuberculomata. Three cases have been reported from Kuhn's clinic by Frank.⁴ The tumors in these cases were at first thought to be sarcomata. They disappeared after iodid of potash was given. In two of the cases the tumors were attached to the septum, in the third case, a child 12 years old, both nostrils were filled with hard tumors. A case has been reported by Krecke¹¹ in which two granulation tumors, the size of pigeon eggs, were present, one on the posterior wall of the pharynx and one in the nose. Scheinmann¹³ describes cases in which he speaks of a syphilitic thickening of the turbinates. This particular type of tumor (syphiloma) is not mentioned at all in many of the well-known monographs and text-books on the nose and throat.

THE DIAGNOSIS.

In considering the differential diagnosis we find that these tumors may be mainly confounded with tuberculosis granulomata, simple granulomata, inflammatory fibromata, lupus nodules, gummata and malignant neoplasms. First it must be remembered that no one of the symptoms that patients with nasal syphiloma complain of, the pain in the head, face and arm, is absolutely characteristic. The same symptoms are present in other affections of the nose, i. e., tuberculosis, caries and malignant tumors (Kuttner). There are several points which macroscopically distinguish these tumors from tuberculomata. They are usually of a peculiar grayish or grayish-red color, firm to the touch and are at times covered with a tenacious, fibrinous exudate. There are sometimes small erosions on the surface of the

tumors, but very rarely much ulceration and they do not break down easily. Manasse observed a deep ulceration in one of his cases. In cases of true syphiloma there is very rarely caries present, and it is doubtful whether a number of the cases on record (the first, fourth and fifth reported by Manasse, and Kuttner's fourth case), in which the syphilitic tumors had their seat in close proximity to septal perforations, belong in this class. Septal perforations occurring during the course of syphilitic affections are undoubtedly the result of gummata breaking down and involving the periosteum. The inflammation of the surrounding tissues accompanying this destructive process may be the cause of some of these granulation tumors arising near the perforation. In the writer's three cases no evidence of caries could be found. The tuberculoma almost invariably has its seat on the anterior part of the septum, although there are a few exceptions, as in one of Kuttner's cases, in which the tumor was attached to the middle turbinate, two of Störk's and one of Chiari's. They show a much greater tendency to break down and usually have either superficial or deep ulcerations. Histologically the diagnosis may be almost always positively made. Goerke⁸ claims that the finding of tubercle bacilli in these tumors is a positive differential diagnostic sign. That this is not always true is proved by the writer's second case, in which tubercle bacilli were found in an unquestioned syphiloma. The vegetative form of nasal tuberculosis described by Gourdiat,⁹ which simulates a malignant neoplasm, must also be considered. These growths also have their seat on the septum and are of slow development. The diagnosis can usually only be made by the histologic examination.

The syphiloma microscopically is made up of round cells and between them some spindle cells. There is also a formation of connective tissue. Walls of the blood vessels are thickened. There are never real tubercles with cheesy centers and very rarely tubercle bacilli, as in the tuberculoma. It must be borne in mind, however, that Chiari has found thickening of the vessel walls in tuberculomata, and that simple granulomata, which also have their seat on the septum, sometimes contain giant cells and thickening of the walls of the vessels. Baumgarten was the first to point out the fact that giant cells are present in gummata, and they were also found by Manasse, Browicz,¹ Brodowski² and others. Kuttner and Manasse have also found giant cells in typical syphilomata. So that histologically the structure of syphilomata and tuberculomata is very nearly the same, really the only points of difference being the presence of tubercle bacilli and tubercles in tuberculomata. Tubercles with cheesy centers, so far as I could discover, have not been found in a syphiloma, and when found would make the diagnosis of a tuberculous tumor positive. Thickening of the vessel walls, as a rule, speaks for a syphilitic tumor. After all, then, when all is said, the administration of iodid of potash is one of our greatest diagnostic measures.

The diagnosis of a simple granuloma has been sufficiently considered. It differs not only in appearance, but in its histologic structure. That of fibroma and lupus can usually also be made microscopically. The differential diagnosis of a syphiloma from a malignant neoplasm, and particularly from a sarcoma, often presents difficulties which are not always cleared up by the microscopic examination. It is sometimes very difficult, as shown by Finder,¹⁴ to distinguish a granulation tumor from a small, round-celled sarcoma. This has been well brought out in a case reported by Levy,¹⁰

in which a small tumor was present in the region of the middle turbinate. A portion was removed and examined by two competent pathologists, and both agreed that it was a small, round-celled sarcoma. The growth entirely disappeared when iodid of potash was administered. The tumors in Frank's cases were also at first considered to be sarcomata. The diagnosis of a malignant growth in the nose can, however, as a rule, be easily made by the subsequent history of the case, by the microscopic examination and by exclusion. The diagnosis of gummata has already been partially considered. Macroscopically they differ from syphilomata in that they are much less elevated above the surrounding mucous membrane and break down very readily. They resemble the syphiloma more nearly than any other tumor. Histologically they are made up almost entirely of granulation tissue (Langenbeck⁹).

In conclusion, a statement made by John N. Mackenzie³ some years ago should always be remembered. In considering late forms of congenital syphilis he said, "that it may lie in a quiescent state in the system for many years after birth, and when it does make its appearance the outbreak usually occurs in the pharynx and in the form of deep destructive ulceration."

So that when a tumor such as I have attempted to describe in this paper (and I realize but poorly and insufficiently), is found in the nose, especially of a young person, and if it resists the ordinary methods of treatment and promptly returns after removal, this unusual form of syphilis should be thought of.

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DISCUSSION.

Dr. W. S. ANDERSON, Detroit—This paper has been very interesting to me, because I have had an opportunity to study a number of such cases. A young girl, about 15 years of age, came to my clinic with an obstruction in the right nostril of three or four months' duration. I found a small growth on the cartilaginous portion of the septum, and back of that was another tumor. The nasopharynx was filled with the growth. There was a large infiltration of the lymphatic glands under the jaw. There was no history of syphilis in the family, so at that time the diagnosis, to my mind, was either sarcoma or gumma. There were many points in favor of each diagnosis. There was no pain and only in the nasopharynx did the growth

appear to be of a malignant nature. I put the child on inunctions and iodid of potassium, and the growth gradually disappeared, until at the end of three months there was not a vestige left. The patient completely recovered. There are several points I would like to make. First, we can not depend very much on the history. Very often we find syphilis where we can get no history whatever. Second, we should not be in haste to operate until we have excluded syphilis. It would be much better to put these patients on a course of anti-syphilitic treatment before operating. Third, mercury is of distinct service, and we should not depend on iodid of potassium alone. There is nothing so satisfactory as mercury by inunction, together with iodid of potassium. In my experience, and I believe it is true in the experience of others, these cases occur very often about the age of puberty, and they seem to be more common in females than in males. Why, I do not know. In some cases I have been able to find diagnostic signs that would indicate that early in life they had had syphilitic manifestations. For instance, in one case there was an iritis, and in another affection of the pharynx and Hutchinson's teeth. In the majority of cases the syphilitic manifestations are so light as to have been passed unnoticed. I have under observation at present a man who has a swelling over the ethmoidal region, pressing the nose out, with a distinct history of syphilis 25 years ago. The diagnosis of syphilis was made by the attending physician, but he said he had him under antisypilitic treatment without result. It appeared to be either syphilis or sarcoma. It disappeared under anti-syphilitic treatment. It seems to me we should not place too much stress either on the lack of a history of syphilis, or on the statement of the family physician that he has given anti-syphilitic treatment. If we put these cases on thorough courses of mercury and iodid of potassium we will often secure excellent results. This is just as true in other parts of the body as in the nose. We should give the patient a chance by antisypilitic treatment before operating.

Dr. WILLIAM L. BALLENGER, Chicago—I wish to suggest that perhaps one of the diagnostic points is not so reliable as stated by the essayist and by the last speaker. Is it not true that antisypilitic treatment will reduce other growths than those due to syphilis? My impression is that it will in some instances. If that is true, it is not of so much importance as a means of differential diagnosis.

QUESTION—What kind of growths?

Dr. BALLENGER—Sarcomata, tubercular growths, and I am not sure but carcinomata.

Dr. J. C. BECK, Chicago—The paper interested me very much from the pathologic point of view, in regard to finding tubercle bacilli in specific growths. I have in mind a case of ablation of the nose from specific involvement, where what appeared like the tubercles of tuberculosis were excised and examined microscopically, we found the tubercle bacilli. These were absolutely proven to be tubercle bacilli by culture. The case was demonstrated by Klebs, who for a short time resided in the United States, and it was proven to be a tubercular growth and beside a distinct syphilitic lesion. The child recovered absolutely under antisypilitic treatment. Fraenkel, as well as many other authors, has found several times mixed infection of this nature, so that these double infections do occur. The disappearance of the growth, after the positive diagnosis was made, and the non-recurrence of the growth, are interesting. A distinct carcinoma of the larynx was shown by Dr. Head of Chicago, in which the diagnosis was confined by microscopic examination. The administration of large doses of iodid of potassium reduced the tumor to half the size for two months, when the case went on in the usual course of carcinoma. Sarcoma does not involve the glands, as a rule, so that when the glands are involved that condition would not come in for consideration. The involvement of the glands would speak rather for syphilis. Iodid of potassium does reduce infiltration, transudations and exudations, whether they are of specific or malignant nature.

Dr. D. A. KURK, Richmond, Va.—I wish to report a case of inherited syphilitic rhinitis in an infant, 11 months old,

referred because adenoids were suspected. Instead, the mucous lining of inferior turbinates was enormously enlarged, almost protruding from the nares. The cartilaginous portion of the nose was much enlarged, looking blue, due to venous stasis. Emaciation was very marked. Family history was unsatisfactory, but from mother's personal history and infant's appearance inherited syphilis was diagnosed. Inunctions of blue ointment were freely used and flexible collodion applied externally to the swollen cartilaginous extremity. In two months the growth had reduced so that there was some nasal breathing. In another month improvement in every respect was very marked, and I have since learned that the child is practically well, though still continuing at intervals to use the antisyphilitic treatment. The diagnosis in this case, though no history was obtainable, was undoubtedly confirmed by the result of the treatment.

DR. PETER J. GIBBONS, Syracuse, N. Y.—It is true that iodid of potassium will reduce many tumors, as well as syphilitic enlargements. But be sure that the iodid is a preparation that you can rely on. Be sure that it is pure and run up the dose to tolerance. As the essayist said, you often find not only general practitioners but members of our branch giving iodid of potassium in gr. vi-xv-xx and not getting desired results. It is hardly necessary to call attention to this at this time, but you must get the dose up to tolerance, which may be anywhere from gr. ii to gr. c., three, four or five times a day.¹ But be sure that your iodid of potassium is iodid of potassium and not sawdust, pipe clay, or some other substitute. If the case is cured by iodid of potassium, we might safely say that it is syphilis, although we, no doubt, get relief in other tumors.

DR. EDWIN PYNCHON, Chicago—Dr. Baldwin of Chicago assures me that he has given iodid of potassium in doses as high as 800 grains a day, and thus gets much better results, that we ordinarily would fail to get with the usual maximum dose.

DR. CLEMENT THEISEN, Albany, N. Y.—Dr. Anderson spoke of cases in which the ethmoidal cells were involved. I tried to differentiate between the syphilitic granuloma and the conditions present with inflammatory processes. In regard to Dr. Anderson's statement that antisyphilitic treatment should be tried before operative treatment, I agree with him, whether there is a history of it having been tried before or not. But in the cases I mentioned it had not been used before. I have, myself, had much better results from iodid of potassium alone than from the combined use of the iodids and mercury in tertiary lesions. Iodid of potassium certainly does influence other growths, as has been said. But in the one case I mentioned, there has been no return for four years, and in the other case there has been no return now for a year and a half.

PERFORATION OF THE NORMAL INTESTINE BY AN ASCARIS LUMBRICOIDES.*

LOUIS C. AGER, M.D.

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NARRATION OF A CASE.

History.—The patient was American born, 36 years old, a carpenter. On Sept. 24, 1901, about 9 a. m., he walked into the Norwegian Hospital, Brooklyn, complaining of diffuse abdominal pain; temperature, 99; pulse, 90. He gave a history of diarrhea for a week, which had been checked by cholera mixture. The previous night he had taken a dose of castor oil.

He was kept under observation, and rapidly grew worse. At 11 o'clock his temperature was 102; pulse, 120. The abdominal pain was localized in the right iliac fossa, and a diagnosis of appendicitis was made. An operation was decided on. At 12:15 p. m. his temperature was 104, pulse 136.

Operation.—At 4 p. m. the abdomen was opened and a congested appendix was removed. Although there were indica-

tions of intestinal perforation, the alarming condition of the patient prevented any search. The operation was completed hurriedly; pulse 167.

The patient died at 4 a. m. the next day, and an autopsy was made at 10:30 a. m.

Autopsy.—On opening the abdomen a large amount of mucopurulent fluid gushed out. There was an acute exudative peritonitis most marked in the right lower quadrant. The intestines were matted together with an exudate, in some places a quarter of an inch thick. On separating the coils of intestines a living lumbricoid was found. After a short search a small round perforation was found in the small intestine, about ten inches above the caput coli. On opening the intestine no other lumbricoid was discovered, and the mucous membrane seemed, except for the clean-cut perforation, entirely normal.

CASES AND OPINIONS IN THE LITERATURE.

On looking up the history of this subject I find various opinions recorded. Many authors are of the opinion that the ascaris is utterly incapable of puncturing the intestinal wall, while others after reviewing the evidence are convinced that the accident does happen at times. In fact, those who deny the possibility do so on entirely theoretical grounds, while those who admit it do so only after a careful study of facts. In Meigs & Pepper's "Diseases of Children," edition of 1870, p. 875, is the following:

Among those who advocate the possibility of perforation independent of previous change in the intestinal coats by disease are M.M. Mondiere and Charaday, the former of whom has examined the subject with a great deal of care. . . . Killiet and Barthez and M. Guersant.

We confess ourselves inclined to believe . . . that worms may in some instances cause a perforation independently of previous disease of the coats of the intestine.

Leuckart, in his "Parasites of Man," p. 138, says:

The possibility of such perforations has been much questioned. . . . It has been attempted to explain these cases . . . by the supposition that the worms play only a secondary part. . . . I think the denial of these perforations is quite unfounded. . . . In some cases the boring is not confined to the wall of the intestines.

T. S. Cobbold, in his book on "Parasites," London, 1873, takes the same view and cites eleven cases, some evidently due to slow erosion, others apparently direct perforations.

In the "American Text-book of Pathology," p. 341, is the statement in regard to ascaris, "It may perforate the alimentary canal." Dr. Stengel, in his "Text-book on Pathology," expresses the opinion that previous intestinal ulceration is an important factor in these cases.

Dr. Flint, in his "Practice of Medicine," edition of 1886, p. 560, says: "It is not probable that the worms ever perforate the intestines as was formerly supposed."

C. Davaine, in his article on "Lumbricoides" in the "Dictionnaire Encyclopedique des Sciences Medical," analyzes 47 cases and expresses the opinion that such puncture can not take place.

AUTHOR'S THEORY OF THE CASE REPORTED.

My own theory, after a careful study of this specimen in a fresh state, is that the worm became blocked in a transverse position in the intestinal canal with one end caught by a fold or irregularity of the mucous membrane, and that partly by its own movements and partly by peristalsis it was slowly forced through the intestinal wall. This process may have been going on during the whole week that the patient was having intestinal disturbances, the peritonitis coming on suddenly as soon as the worm passed completely into the abdominal cavity, permitting the escape of the intestinal contents.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. A. Stengel, W. S. Hall and Frank B. Wynn.

Appended will be found a table of seven previously reported cases and related bibliography.

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DISCUSSION.

DR. HENRY B. WARD, Lincoln, Neb.—I know of a number of cases in which the worm was found to have penetrated a diseased bowel, but I believe only one case has been reported in which a positively normal gut has been penetrated by this parasite. I can hardly understand how the worm can become blocked in the intestine and gather sufficient force to push itself through the normal wall. The ascaris has a firm body, and can not coil itself closely, as the body breaks when bent. Usually the head of the male worm is more pointed than that of the female, and the worm in this specimen is evidently a male.

DR. W. A. EVANS, Chicago—This worm has been found frequently in the lower animals, imbedded in the wall of the intestine below the mucous membrane, but rarely ever penetrating the muscular coat. This is seen especially in hogs.

DR. HENRY B. WARD, Lincoln, Neb.—I have known the wall of the intestine to be penetrated by certain other worms, as the ankylostoma or uncinaria and trichocephalus, but it is exceedingly rare for the ascaris to penetrate the mucous membrane.

DR. LOUIS C. AGER, Brooklyn—There are cases reported in which large numbers of these worms have gotten into a mass and, by erosion, produced ulceration. There are also cases of umbilical abscess reported, in which the worm has been discharged from the umbilicus, probably due to a patency of the fetal duct leading to the umbilicus. No histologic examination of the gut was made in this case, but the macroscopic appearance gave no indication of chronic ulceration. Moreover, it would be a strange coincidence if a single small ulcer had existed in the gut and that this worm should have found that spot. I think this worm must have worked its way through the bowel by a slow process of erosion of the tissues. There have been cases reported in which lumbricoides have been found in the kidney, inguinal glands, and other places adjacent to the intestinal tract, and they have even been discharged from the eye duct and from the auditory canal. I do not believe that this worm braced itself transversely, but more obliquely, in pushing its way through the bowel. The lumbricoid can coil itself to a limited extent. I have seen one case in which 50 or 60 worms were in one mass, all being coiled on themselves and on each other. One case has been reported in which 5,000 worms were discharged in the course of 18 months.

Typhoid Fever at Lille, France.—Professor Lemoine, in discussing the marked and permanent increase in the number of cases of typhoid fever at Lille, remarks that the majority occur among the well-to-do, and in the fall. Most of the patients had spent the summer elsewhere, and had thus lost their relative immunity to the local water, while the early fall rains pollute the water more or less. The extensive work on the streets has brought to the surface long buried generations of microbes which are whirled about in the dust and fill the hospitals during the dusty season. The only time when the hospitals are comparatively empty is during wet, foggy weather when the microbes are held down by the moisture under foot. But this is the time when the typhoid germ is most active, as it reaches the system in the drinking water. His article appeared editorially in the *Nord. Med.*, Dec. 15, 1902.

THE CLINICAL APPLICATION OF SOME
THYROID GLAND EXPERIMENTS.*

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 Member of American Physiological Society.
 DETROIT.

In 1890, at a time when little or nothing was known of the chemical constitution of the thyroid gland and when we were unaware that it possessed any particular therapeutic action, the writer offered the first experimental proof that the thyroid gland was in some manner concerned in the general metabolism of the organism.¹ While even to-day we are not in possession of any positive proof of the true physiologic rôle of the thyroid gland, its action as a therapeutic agent, and further the clinical and experimental results following total extirpation along with the action of diet in various thyroid diseases and after total extirpation of this gland, indicates that it is in some manner invested with a metabolic function, but which we are not as yet able to particularly define. It would lead us too far were I to attempt to give a résumé of the various phases through which the subject of the function of the thyroid gland has passed. For the reason, however, that both Victor Horsley² and F. Blum³ have misconstrued my position in reference to the metabolic significance of the thyroid gland to the organism, I should like, in a few words, to explain the circumstance which prompted me to study the influence of diet on thyroidless animals.

In 1888, when I first took up this subject, Professor Munk, in whose laboratory I was pursuing my work, believed that the thyroid gland could not be looked on as being of absolute vital significance to the organism, for the reason that some animals remain perfectly normal after total extirpation of this gland, and as late as 1897 Professor Munk⁴ again emphasized this statement. He believed that the symptoms following the total extirpation of the thyroid gland were in a large measure the result of irritation of the vagosympathetic nerves and their branches.

The writer instituted a series of experiments in which he applied both chemical and electrical irritation to the various cervical nerves without, however, producing in any case symptoms resembling those noticed in thyroidless animals. To definitely decide this question the writer devised the following method of experimentation: First, the left vagosympathetic and the superior laryngeal nerves were extirpated, the superior incision being made at the superior ganglion and the lower incision half an inch below the lower border of the thyroid gland. The animals were carefully observed during a period of three weeks following the operation; they remained perfectly normal. Following this period the right thyroid gland was totally extirpated and the animals again carefully watched for a period of three weeks, during which time they remained in an absolutely normal condition. Finally the thyroid lobe on the side on which the vagosympathetic had previously been removed was extirpated, and it was shown that the dogs succumbed in precisely the same manner as did the dogs in whom this method had not been resorted to, thus proving that nerve irritation is not absolutely necessary to the production of death after total extirpation of the thyroid gland. Professor Munk, and also E. Fuhr,⁵ had noticed that the first thyroid symptoms, fibrillar, clonic and tonic muscu-

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. Alfred Stengel, L. Hektoen and Winfield S. Hall.

lar contractions with cardiac and respiratory distress, following total thyroid gland extirpation often were developed after the feeding of meat. They ascribed this circumstance to the mechanical irritation which the meat produced during its passage into the stomach.

The negative results of the experiments which I have just detailed in reference to nerve irritation, etc., in connection with several observations I had made in feeding boiled meat, led me to institute the experiments on the influence of the feeding of milk and eggs and raw and boiled meat on thyroidless animals.

These experiments consisted in keeping dogs on a diet of milk or milk and eggs for a number of days and then performing a total extirpation of the thyroid gland, or a partial extirpation and then finally a total extirpation and thereon noting the influence of a milk, egg, boiled and raw meat and beef-broth diet. It was shown that 30 per cent. of all animals fed on a milk or boiled meat diet, but particularly a milk diet, remained entirely healthy, but died when put on a raw-meat or beef-broth diet. All of my animals that were fed on raw meat from the beginning of the experiment succumbed to the operation.

These experiments then furnished the first evidence of the metabolic significance of the thyroid gland to the organism, and further, that a milk diet acts more favorably than a raw-meat diet in dogs in whom a total thyroid gland extirpation has been performed.

Following the publications of these results, De Quervain,⁶ Rosenblatt,⁷ Glinatz,⁸ Glunzinki,⁸ Lanz⁹ and Blum³ repeated my experiments and corroborated the conclusions I had reached, viz., that a milk diet acts more favorably than a meat diet after total extirpation of the thyroid gland.

Clinically the results of these experiments have been found to be of considerable importance. Thus, Nothnagel, in his chapter on myxedema, recommends the withdrawal of meat and the substitution of a milk and vegetable diet in the treatment of this disease. Rumpf, v. Ziemssen and Blum likewise recommend the same course of dietary in the treatment of thyroidal diseases. Professor Ewald, in his work on the thyroid gland, also states that the clinical application of the milk-feeding experiments is of great value in the treatment of various thyroidal conditions. He remarks:¹⁰ The best results are achieved in the treatment of myxedema and cachexia strumipriva where a milk and vegetable diet is persisted in. Both Strich and Lanz independently came to the same conclusion.

Lastly, Moebius¹¹ recommends the same course of dietary in the treatment of Basedow's disease. I have been prompted to give a short sketch of these experiments and their clinical application for the reason that while most clinicians on the other side of the water lay considerable stress on diet in the treatment of thyroidal disease, American clinicians have paid little or no attention to the subject.

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The great secret of success in life is to be ready when your opportunity comes.—Lord Beaconsfield.

THE CHEST-PANTOGRAPH.

ITS PHYSIOLOGIC SIGNIFICANCE AND ITS CLINICAL APPLICATION.*

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Not long ago a prominent clinician of Chicago requested the writer to contrive an apparatus by which chest contours could be accurately measured and recorded. Such an instrument was said to be needed by those who specialize in diseases of the thorax or who have any occasion to record thoracic conditions for statistical or other purposes.

The writer's first attempt to solve the problem given him by the clinician was a rather expensive experiment, with an instrument which consisted of about twelve curved lever arms, which came down to the thoracic walls, touching its circumference at any desired plane. The short arm of these levers was provided with a needle which pricked in a paper a line of holes which represented the chest contour. This was found to be a faulty apparatus in several important points, and it was discarded.

One day the writer saw an artist making charts for lecture room use, by enlarging figures from a book, the

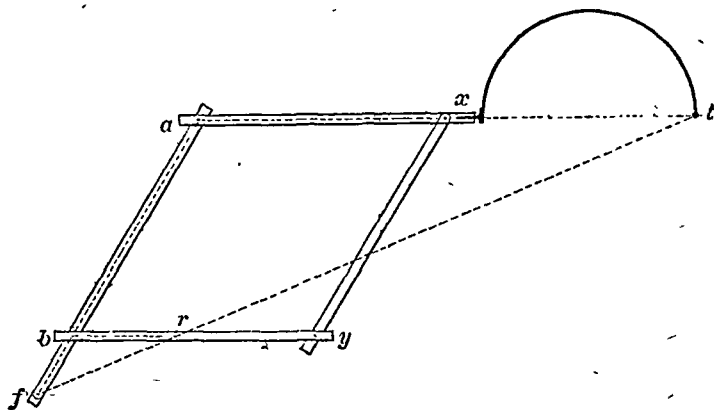


Figure 1.

outline of the figure being traced with a pantograph. The idea of reversing the process and making a reduced outline of the chest was adopted, and the first apparatus made was a success.

Figure 1 shows the instrument, which is constructed of brass or wood, with brass or steel semicircle. The joints, *a*, *b*, *x* and *y*, move easily in the plane of the instrument. The semicircle, 40 inches in diameter, rotates at *x* around the diameter *tx*. The point *f* is fixed to a table. With *f* a fixed point, all movements of *t*, the tracing point, are accompanied by corresponding movements of *r*, the recording point. The triangles *ftb* and *fta* are similar triangles in all positions of the instrument. If these two triangles are similar, their corresponding sides must be proportional, therefore, $fb:fa::fr:ft$; but $fb:fa::1:5$, therefore, the distance *fr* is always one-fifth the distance *ft*. In other words, the recording point, *r*, which is represented in the instrument by a pencil which records its movements on ruled paper, is always one-fifth as far from the fixed point, *f*, as is the tracing point, *t*. This recording point, *r*, moves in the same direction as the tracing point, *t*, the only difference being that it moves only one-fifth of

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. Alfred Stengel, L. Hektoen and Frank B. Wynn.

the distance through which t moves. This results in the formation on the paper of a contour tracing of the thorax, absolutely accurate in every curve and diameter, except that it is reduced to exactly one-fifth the actual dimensions.

The object of the semicircular arm is, of course, to permit the tracing point, t , to be carried around the thorax. The seat on which the subject sits may be adjustable in height, or the table on which the instrument is fastened may be adjustable in height; in fact, it has been found that there is advantage in having both an adjustable table and an adjustable seat. If one wishes to take contours at various levels of the body between the shoulders and the pelvis, there should be a back rest to keep the subject's body from swaying backward and forward or from side to side. This back rest can take the form of a simple rod about one foot in length, inserted into the edge of the table. This rod should extend out horizontally and at right angles with the edge of the table, and should be located opposite the point in the table where the pantograph socket is fastened to the top of the table.

With all these conditions satisfied (and they are not difficult conditions), let the subject to be examined sit beside the table, with table and seat so adjusted as to bring the plane of the thorax to be examined into the plane of the instrument, that is, on a level with the top of the table. Place a sheet of the record paper on the table parallel with the sides of the table and held in place with thumb tacks. Let the subject inflate the lungs, place the tracing point, t , on the distal side of the thorax at a point marked on the skin; sweep the tracing point around the posterior aspect of the thorax to a point on the proximal side; rotate the semicircle so that its convex side will be anterior; sweep the point, t , around to the starting point. You have now traced a contour at the end of inspiration. Let the subject exhale to the position of repose, or, if desired, to the position of forced expiration. Then retrace in the opposite direction, and the result will be such as shown in Figure 2. This tracing has the advantage of showing the general type of the thorax, and the relative diameters in any direction. It shows the amount of expansion, and, furthermore, it shows whether or not this expansion is symmetrical.

The accompanying figure shows two such contours from healthy, well-developed men. Two millimeters in the figure equal one centimeter of actual measurement. The inner contour is that of forced expiration, while the outer one is that of forced inspiration. In contour A the increase of lateral diameter by forced inspiration is 2 cm., while the increase of dorsoventral is 3 cm. In the same contour the cross sectional area of the thorax in the plane of the ninth rib is represented by 25.52 of the larger squares containing 25 square cm.; total area equals 637.5 square cm., while the cross sectional area of the chest in forced expiration is 517.5 square cm. Forced inspiration shows an increase of 120 square cm., or about 23 per cent. over cross sectional area of forced expiration. Furthermore, both contours show a prominence in the right side (left of the figure) possibly due to stronger musculature on that side.

The instrument accomplishes the purpose for which it was intended, and seems to be well adapted, for use in all cases where chest contours are desired for either clinical or statistical purposes.

Any abnormalities in contour, even slight though they may be, are instantly made apparent in the outline.

when an inspection would not reveal them and measurements of diameters would do so only after a laborious comparison of results with tables of average and typical measurements.

The general character of the chest, whether flat or deep or normal, is also made apparent to both observer and subject, and the record is an important part of the data which indicate a line of exercise to develop those dimensions which are below grade or to diminish dimensions which may be abnormally large. One's thought turns in this latter instance to cases of "pigeon-breast" in boys, cases which, even in mild degrees, are made strikingly apparent in the contour, and cases in which the influence of proper exercise in early youth may be wholly corrective or decidedly ameliorative.

The insurance examiner, the physical examiner of the Y. M. C. A. or of the college gymnasium, the physical examiner for the army and navy, as well as the specialist in chest diseases, will at once see the utility of having these records of chest contours.

In closing, the writer wishes to call attention to some of the advantages of this instrument over other instruments which are intended to accomplish a similar purpose:

1. The chest pantograph is so simple in construction that it does not easily get out of adjustment and can not readily be injured in use.

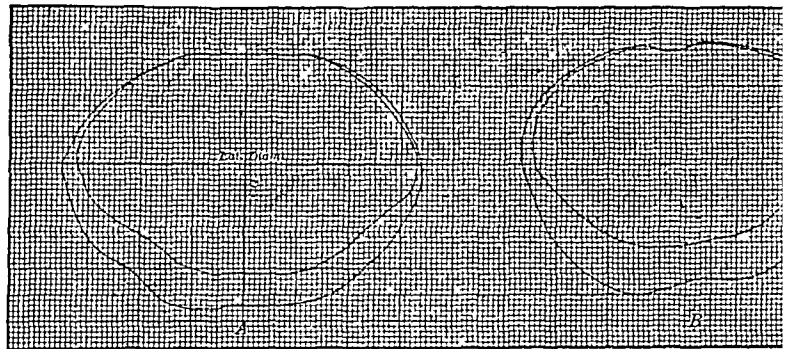


Figure 2.

2. It is inexpensive.
3. It is compact; when not in use it can be folded back along the back of an office table or lifted from the table socket and hung on the wall.
4. The record is accurate, and is reduced in size to dimensions readily adapted to filing away with clinical records.
5. The record being a graphic one appeals at once to the eye and reveals all divergencies of the contour from the normal without the necessity of reference to tables of averages.

An Unheeded Peril in Preserved Meats.—Giovanni Grixoni has found that the fluidification of the gelatin contained in cans of meat, and in bottles of concentrated broth is a very certain sign of damage, even when other signs are lacking. This fluidification is due to the action of living bacteria and trypsinic ferments secreted by them. Peptonized preserved meats have toxic powers, for, whether inoculated into, or eaten by rats and mice, they cause their death. The toxins produced in fluidified preserved meats have a powerful antibacterial action, prevent the development of putrefaction, and are soluble in water. They are destroyed by a temperature of 100 C. Serum diagnosis in infections of alimentary origin is an excellent method for the recognition of the etiological agent. The prolonged presence of microbes in the can profoundly modifies their biological properties, prevents their development, and finally causes their death. Cans containing living germs, even if these are saprophytic, should be excluded from the dietary. —*La Rif. Med.*

NERVE NOSTRUMS AND THEIR DANGERS.*

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SONYIA, N. Y.

Nerve nostrums and their dangers constitute a subject far too comprehensive for full discussion in the brief time at our disposal, and we will omit the presentations of facts that aim to show what a race of nostrum makers and nostrum takers the American people are coming to be, and take up other matters connected with the subject that should engage our undivided attention, and which are as follows:

1. Why do people take nerve nostrums; or, indeed, nostrums of any kind?

2. Wherein does the use of nerve nostrums tend to impair the public health?

3. What measures, if any, can we take to lessen or destroy the nostrum-taking habit?

Longfellow plainly expressed a lack of faith in, if not contempt for, nostrums when he wrote

Purge with your nostrums and drugs infernal

The spouts and gargoyles of these towers; not me;

and reference to the meaning of the word "nostrum" shows at once the secret of the power they possess over the public mind.

"Nostrum," says a high authority, means "a medicine the composition of which is kept secret"; "a quack medicine"; and the key to the whole situation lies in the word "secret." The element of mysticism always holds our interest. It is that alone which gives the juggler's trick its charm. Remove our ignorance as to the manner in which the trick is done, and simultaneously you destroy our interest in the method of its performance.

Venders of nostrums, with a fine show of commercial shrewdness out of all proportion to any sense of common virtue, understand this frailty, this very common lack of logic on the part of the public mind, and trade freely on our credulity purely for commercial gain. They approach us from every side, in every place, and under all possible guises, with the most marvelous and glowing propositions designed to catch the public eye; then feed the little flame so adroitly kindled by dosing us with things about which we know nothing, and which we are pleased to swallow, in testimony of our simple faith.

The quack's secret is his own and forms his most valuable stock in trade, and often enough it is his only asset. Remove the seal of secrecy from his nostrums and his business of ruthlessly despoiling the public health and depleting the individual purse for the sole purpose of enhancing his own financial gains, will disappear like the mist before the rising sun.

Taking up the second proposition, viz.: Wherein does the use of nostrums tend to impair the public health? We may answer that the empirical use of any drug for the cure of a given disease is less logical and less scientific than if that drug produced specific action necessary for the relief of specific morbid conditions. This makes empiricism the basis on which nostrums are supposed to act; and this in itself might not be so bad in some cases if the disease for which the individual is being treated had first been correctly diagnosed.

But that is far from being the case. The mail bag with the quack takes the place of the instruments of

precision and personal judgment of skilled physicians, so that the quack is doubly handicapped in his attempts to treat disease; first, by not knowing the nature of the disease he is treating, and secondly, by having to rely entirely on the less scientific principles of empiricism as compared with more rational forms of therapy.

Nostrums, however, do sometimes seem to effect a cure by suppressing the activity of symptoms in diseases like epilepsy. But, after all, it is only suppression, and not cure. In the Craig Colony report for 1898 we spoke of the matter as follows:

And so it is that the manufacturers of patent nostrums and the great army of quacks who thrive throughout the land, find in the epileptic their readiest victim. They beguile him with vivid representations of wonderful cures and then deliberately set about to rob him of his honest means, and what is worse, of what little vigor of constitution he may possess. He is deceived with a drug that suppresses his attacks for a little time, but which does not cure, and which must be taken in such large doses that in time it destroys his mind and ruins his physical health. We are not giving hearsay evidence, but facts, and to make sure of such facts we tried one of the "surest cures" at the colony with the result that two patients were made temporarily insane.

A young man of excellent family and personal attainments was admitted to the colony whose malady for the past year had been rapidly growing worse, and who had in his possession at the time of his admission 26 separate and distinct quack and patent remedies, all of which he had been using to some extent. He was at once relieved of them, with the result that he at once began to improve.

Two years later, after having collected much additional evidence of the infinite amount of harm nerve nostrums do in cases of epilepsy, we again referred to the matter in our annual report, citing the following case:

C. B. M., a young boy, died at the colony September 24, from the direct effects of much drugging with "R.'s Nervine." He came to the colony first in January, 1897, remaining here a year and going away very much improved.

While here he attended school, made very satisfactory progress and bid fair to be able in a few years to return to his home and take up some vocation. After returning to his home, he grew rapidly worse. He was then made to take "R.'s Nervine" in large quantities. He rapidly became stupid and apathetic, his circulation sluggish, his skin harsh and dry and his body covered with sores. Still his parents could not see that "R.'s Nervine" was the cause of the boy's deplorable condition and continued to give him the poisonous drug. He soon became so bad that he was returned to the colony, but the drugging with the nostrum had gone too far; he did not respond to proper treatment and died very shortly after his readmission. His mental condition, when he came back, resembled that of most pronounced primary dementia.

Numerous other instances similar to this, but in which the nostrum treatment was stopped before it had gone so far, have come under our observation; and we know that nostrums for other nervous diseases produce effects equally as disastrous; and the giving of powerful drugs to patients, concerning whose drug idiosyncrasies he is ignorant, is but another of the quack's dishonorable methods.

We come now to the third proposition, by far the most important of all, and that is: What means, if any, can we take to lessen or destroy the nostrum-taking habit? A well-known clergyman in the city of Rochester lately said, in a public speech, that "the widespread practice of such arrogant quackery as that which universally pertains to-day is a blot on every honorable physician's escutcheon"; and I fear the indictment stands on solid ground.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Materia Medica, Pharmacy and Therapeutics, and approved for publication by the Executive Committee: Drs. A. W. Baer, A. B. Lyons and W. J. Robinson.

As guardians of the public health, it is plain that the suppression of quackery is a duty we have not yet fulfilled. To make any impression for good on the unsavory practice will be a long and tedious uphill task, but this ought not to deter us for a moment, and it would seem that now, since the prospects seem so fair for cementing into a closer fraternal union the physicians of the entire country, is a good time to start the work on its way.

There are three things I have to propose that would be effective in lessening or destroying the nostrum evil. Two of them, while less effective than the third, are easier of application; while the third, which would be wholly effective in itself, could only be given force through national legislation.

The first is, an arrangement by which a continuous series of articles could be written for publication in the leading medical journals of the country, and which would specifically and unmistakably set forth the dangers of advertised nostrums; the same articles being afterwards published in the daily papers and in the literary magazines, in the form of standing advertisements if need be. Having the authoritative backing of the best medical journals, such matter would be bound to command attention and respect on the part of the public.

The second plan is to inaugurate in every city a course of lectures to show the evils of indiscriminate medication through patent nostrums, making the object lessons plain and forceful and placing the lecture course on a popular basis.

To carry out these plans would cost something, but there is no question that the money could be raised, either through private contributions, or by an assessment against the members of the medical profession.

The third plan, and the only one bound to be entirely effective if once established, is to have a national law regulating the manufacture and sale of nostrums and the practice of quackery, the feasibility and utility of which has been demonstrated in many countries abroad.

In Austria the sale of any nostrum or arcanum is strictly prohibited, and proprietary medicines may be sold only if their ingredients and the manner of compounding them have been made known. Such medicines, however, can not even then be purchased without physicians' prescriptions, unless they have been designated by sanitary authorities as harmless.

In the same country the law even undertakes to regulate the price to be charged for such preparations, for it provides that whenever the reasonableness of the price of a proprietary medicine is questioned, it shall be rated on the basis of the official tariff approved by the Austrian pharmacopoeists. It is evident that patent medicine men do not become millionaires in Austria.

In Belgium the law holds a pharmacist responsible for every drug sold by him, which provision applies to proprietary articles as well as to all others, and requires that in the sale of proprietary articles the composition of the same in detail shall appear in connection with its label.

The French government, the most advanced of any of the nations in this respect, in order to carefully guard the health of its citizens and to prevent the evils arising from the manufacture and sale of deleterious drugs and compounds, has from time to time passed strict laws and regulations covering the practice of pharmacy and the preparation and sale of chemicals for industrial and

commercial purposes. The sale of medicinal compounds or remedies, the ingredients of which are only known to the proprietors, is absolutely prohibited in France. The law requires the inventors or owners of such remedies to communicate the formula of their preparations to the minister of commerce, with the list of diseases to which they are applicable, and a statement of the actual trial to which the medicines have been submitted. The National Academy of Medicine then examines the composition of the remedies to ascertain if their administration might be dangerous in certain cases; if the remedies are good in themselves; if they have produced or will still produce beneficial effects on humanity; the proper price is paid by the government to the inventor of a remedy recognized to be useful. This recompense is based on the merit of the discovery, on the advantages which have been obtained or which are to be obtained in curing human ills and on the personal advantages which the inventor has already derived from the remedy or may hope to derive from its adoption. An agreement is then drawn up between the minister and the inventor, ratified by a higher authority, and the secret published without delay.

In Germany the use of patent nostrums is greatly discouraged by the German government, and every notice or advertisement of this class of preparations must distinctly embrace an accurate analysis of the ingredients or component parts used in such preparations.

In Russia no proprietary medicines are allowed to be manufactured or sold, this country going further than any other by absolutely prohibiting the manufacture and sale of nostrums of all sorts.

With the English-speaking races it is radically different. In the Dominion of Canada the utmost latitude is allowed in the sale of such things, for they are sold in all grocery stores, the proprietors of which sometimes underselling the regular wholesale trade.

The same state of affairs exists in British Honduras, grocery stores here dealing in many of the ordinary drugs that are only sold by licensed apothecaries in this country.

In Brazil the law respecting the sale of chemicals, medicines, poisons and other proprietary articles is very strict, and if enforced can not help being of great benefit to the public and a protection to the physician, pharmacist and the druggist.

The Chinese government, on the other hand, has no laws regulating the sale of drugs. Chinese merchants, however ignorant of pharmacy, are permitted to sell drugs so long as they pay what is known as the "liken tax"; and to show the lax manner in which medicines are used in China, the United States Consul translates a prescription for "weak and diseased lungs," consisting of a "decoction made from gentian, apricot kernels and seven other medicines," without in any way indicating the name or nature of the last seven.

When the medical profession of this country decides to enlist the aid of Congress in formulating laws regulating the manufacture and sale of nostrums, it would seem that they might do well to try and avoid, on the one hand, the Scylla of overcaution, such as pertains in Russia, and, on the other, the Charybdis of utterly false therapeutic license run riot, such as pertains in China, and adopt a midway standard at once just to all, sensible and practicable, like that now in force in the French Republic, and which had its origin under the reign of the Emperor Napoleon in 1859. To aid in the enactment of such legislation would seem to be a

most natural thing for the Association to do, for its Code of Ethics reads as follows:

It is derogatory to professional character for a physician to prescribe or dispense a *secret nostrum* whether it be the composition or exclusive property of himself or others. For if such nostrum be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality, and if mystery alone gives it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice.

And, in conclusion, it seems pertinent to ask why the present is not as good a time as any for the American Medical Association to discuss plans for taking the matter to Congress in Washington.

HYPNOTICS, ANALGESICS AND RESULTANT DRUG ADDICTIONS.*

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Insomnia and pain are the banes of existence of the patient with any nervous affection, and from his standpoint are in themselves the maladies from which he is suffering. He prays his physician for relief from one or both, knowing, alas too well, that the market is full of drugs that will bring him relief. It does not often occur to him that the physician has any more complicated mental process to go through than merely to choose the right drug to bring healthful sleep and to banish pain. Insomnia and pain may each be the cause of the other, or they may be the outward symptoms of an exceedingly complex condition of derangement.

CLASSIFICATION OF INSOMNIA.

In trying to study the causes of sleeplessness I have found it helpful to remember the classification of insomnia that Sir James Sawyer lays down in his "Contributions to Practical Medicine." He says:

Cases of insomnia seem to divide themselves naturally into two groups, namely, of cases of what may be called *symptomatic insomnia*, and of cases of what may be called *intrinsic insomnia*. Symptomatic insomnia attends a vast variety of morbid states, and is secondary to them, or is part of them. Intrinsic insomnia, or insomnia per se, is a kind of wakefulness that seems to depend on the inability of the brain to adapt itself to the conditions of sleep.

Symptomatic insomnia, or the sleeplessness that is one of the symptoms of a disease attended by severe pain is not so difficult to treat, provided the pain, or the elevation of the temperature, or the coughing be the only cause. We may control it either by using hypnotics or soporifics, or by giving drugs that will reduce the fever or diminish pain, or stop the cough; or we may combine the treatments, and use soporifics in conjunction with the remedies that will remove the causes of pain or fever.

The family physician who uses sulphonal or trional for the purpose of inducing sleep in severe illness, employs one of the most valuable aids to recovery, for sleep as a natural remedy in disease is as necessary as any therapeutic remedy. But, at the same time, these drugs, if used continually, will of themselves cause the worst kind of insomnia, that in which natural sleep is absolutely impossible without the aid of a drug.

Intrinsic insomnia, to refer again to the classification of Sir James Sawyer, is due to various causes, which he divides into three groups, viz., the *psychic*, the *toxic* and the *senile*.

Psychic Insomnia.—It is taught that the brain in natural sleep is relatively anemic. When the brain is in full working activity the cerebral arteries are well filled with blood from which the brain cells are rapidly receiving nourishment and ridding themselves of waste. During sleep the blood flows more gently and in smaller streams through the brain; and the brain cells are not expending energy, but are storing it up. Anything, therefore, which tends to keep up the activity of the brain cells and keeps the blood circulating freely through the brain tends emphatically to keep the brain cells from repose and the patient finds himself sleepless. The psychic causes of such brain activity may be the habit of thinking over business or work after going to bed, worry, anxiety, excessive mental work that will not let the brain cells cease working for several hours after the real work stops, sudden grief or shock, or form of preying sorrow, remorse or loss of hope.

Toxic Insomnia.—The toxic causes of brain activity are due to some poison, that maintains the arterial supply of the cortex of the brain at such a height and so long that wakefulness is inevitable. These poisons may be in the form of drugs that have become a habit; alcohol, or the milder stimulants of tobacco, tea or coffee, or, on the other hand, the poisons may be certain accumulated waste products of the patient's own metabolism.

Senile Insomnia.—Senile causes of sleeplessness are due to the age of the arteries. As the smaller cerebral arteries lose their elasticity their walls grow weak, and they are physically unable to regulate the flow of blood to the brain which ought to be diminished at night to cause the sleep of youth.

On this brief classification of the causes of insomnia I would establish an outline of the kinds of treatment that are recommended by men of wide experience, with a discussion of the question of how far hypnotics may be used to relieve insomnia and analgesics employed to alleviate pain without danger of resultant drug addiction.

THE DECLINE OF STOICISM.

In the first place, I would say that the demand for relief from minor pains and slight insomnia has increased with the supply of remedies. Although my experience is limited to some ten or twelve years of practice, and I can not with authority compare the older days with the present, yet I think I may safely say that people, as a rule, do not bear pain as bravely as they did before the days of anesthetics, analgesics and hypnotics. Such scenes of fortitude as Ailie's operation in Dr. John Brown's story of "Rab and His Friends," are, we are thankful to say, unnecessary now; but at the same time the day is past when women bore the pain of cancer, or the knowledge that they were dying of a tumor, to their graves without opening their lips to anyone save their physician. The brave serenity of spirit showed by Sydney Lanier, who was carried to his class room to give his lectures, and who never permitted his illness to be mentioned, and the gay stoicism of Robert Louis Stevenson, whose only reference to his hemorrhages were as to his friend "Bloody Jack, who was with him that morning," are examples of that heroism in suffering which I believe has become much more rare with the introduction of the many pain-relieving remedies.

Any sufferer may to-day, at the cost of ten cents, purchase temporary relief from a headache that is due to overwork, or an artificial night's sleep where sleep should have come naturally. To suffer is no longer deemed

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Materia Medica, Pharmacy and Therapeutics, and approved for publication by the Executive Committee: Drs. A. W. Laer, A. B. Lyons and W. J. Robinson.

brave, it is deemed ignorant; but the little knowledge that will bring relief is too often a dangerous thing.

The result of this easy and sure means of obtaining relief has led patients, and sometimes physicians, to be too easily satisfied with relieving pain and giving artificial sleep instead of ferreting out the cause of the trouble and removing it, as they were obliged to do in the old days if they would stop pain.

I do not purpose to speak of drug habits acquired by patients who treat themselves, except to say that every analgesic and every hypnotic is dangerous if used indiscriminately; and that all patients should be emphatically warned that there is nothing that they can take regularly and persistently to relieve pain or sleeplessness without doing themselves permanent injury. Paradoxical as it may seem, the least harmful drugs are often the most deadly. Fewer men and women ruin their nerves by the abuse of chloral than they do by the use of bromids. I have had many patients the victims of the bromo-seltzer habit, who took high moral grounds against the use of morphin and chloral. I have entered a business man's office and seen it stocked with a winter's supply of bromo-seltzer, with which he proposes, as was his wont, to ward off his regular afternoon headache; and I have had as hard a fight to bring him, by means of travel, exercise and diet, to a normal state of health as in breaking a morphin fiend of his habit.

It would greatly lessen the dangers of drug habits if family practitioners would encourage patients to endure a certain amount of the pain and sleeplessness of general diseases, never saying, "I will leave you something perfectly harmless that will make you sleep"; or, "I will give you something very new and very powerful that will stop that pain in ten minutes." The drugs for relief should, as far as possible, be combined in prescription with the drugs that treat the disease, or left without name or emphasis to be taken at the right time. In almost every case the abuse of phenacetin, antipyrin, acetanilid, the salicylates and allied products has begun by a physician calling especial attention to the efficacy and harmlessness of these drugs first prescribed to ease the pain and sleeplessness of some acute disease, such as tonsillitis or grippe.

THE USE OF FAKE SYNTHETIC FORMULÆ.

In this connection I can not refrain from calling attention to a large number of combinations of well-known drugs of this class that are given fake chemical formulæ, and which, while substantially mixtures of such remedies as antipyrin, acetanilid, phenacetin and allied synthetics, yet nevertheless are claimed to be new and important synthetic discoveries. It is to be regretted, moreover, that there are to be found physicians who will describe at great length and in much detail the wonderful cures which have resulted from the use of some of these impossible synthetics. All honor should be paid and support given to the enterprising chemist who has devised a really good new product. The profit that he may make from it is legitimately his, but physicians, as a class, I believe, are too prone to accept unchallenged the statements of some manufacturers who put out misfit combinations.

It is not expected that we as physicians should bear always in mind the chemical lore of our laboratory days, but a more careful scrutiny of the great flood of newer synthetics is advisable if not imperative. Moreover, when it is to be borne in mind that many of these so-called newer synthetics are sold for from fifty cents to one dollar an ounce, when their constituent parts may

be purchased for from ten to twenty cents per pound, the robbery is made possible only under the guise of a trade name, and if the education of the physician is not sufficient to protect the public, then legislation is imperative.

HOW TO TREAT INSOMNIA.

As a rule the few doses of such drugs that are necessary to bring relief in acute diseases, whether to ease pain or to bring sleep, lead to no habit. As soon as the body has recovered its tone, and so soon as the cause of the pain is removed and the pain itself has disappeared, the body does not crave a repetition of the drugs. Even opium, in any of its forms, can be borne well and leaves no bad effect when intelligently prescribed. The sole danger in such cases, I believe, lies in the fact that the patient knows what has given him relief, and will, inevitably, tamper with the fascinating drugs when he has some minor ailment in the future. He then almost invariably runs a twofold danger: by continually giving himself relief from a pain that ought to be investigated he ignores the cause of his pain until his disease is pronounced, and in the meantime has by repeated use of the drug habituated his nervous system to overstimulation.

These cases in which pain and insomnia were at first merely secondary phenomena form a large percentage of the patients who afterwards come to us to be treated for the toxic form of insomnia *per se*.

In the severer grades of psychic insomnia it is often necessary to secure a few nights of artificial sleep at any cost; for the sleep of itself will in a few days induce sleep and the doses may be tapered off, or the need for them will stop naturally. In the cases of insomnia following sudden shock, great mental excitement, the anxiety attendant on strain of business, or the nervous state of worry in women that is accompanied by a hysterical breakdown, it is wise to give hypnotics and to induce sleep until the body is thoroughly refreshed. In such cases many physicians prefer, I think, with good reason, opium or chloral, or their combination, although of late years the use of trional and sulphonal with some of the modifications of chloral, chloralamid, etc., have given excellent results.

Sir Lauder Brunton has suggested with much wisdom that a combination of hypnotics is more successful than any one of them singly. He recommended the now well-known mixture of small quantities of morphin, chloral and the bromids, and this is a favorite combination of a great many of us.

POPULAR KNOWLEDGE OF OPIUM UNDESIRABLE.

Whenever opium enters into the prescription for the relief of insomnia or pain, too much caution can not be urged. This is an oft-repeated tale, and yet from the crop of habitués of this drug that I see yearly, it seems not altogether to have been learned. At the same time, it is my own firm conviction that there is too much popular knowledge of the effects of opium, and personally I should condemn in the strongest possible manner the practice of the Woman's Christian Temperance Union of imposing on the public the 10 to 25 per cent. of information regarding alcohol and opium which they make obligatory in the publication of school books. The giving to the young and immature a knowledge of the seductive activities of any agent is, in my humble opinion, a practice worthy of the severest criticism.

THE NEWER OPIUM DERIVATIVES.

But this leads away from the last topic of my paper, the new opium derivatives. These, heroin, dionin and

peronin, as is well known, are derivatives of morphin; modifications by chemical substitution of groups of atoms. They are distinctly not morphin, and their activities have definite and distinct individualities. The pharmacologist who would alone register blood pressure, respiratory activity and heart beat, may maintain that these drugs have an identical action; but he does so on very meager and insufficient data. The psychologic manifestations of the activities of these drugs are distinct and in the genesis of drug habits, the brain and its activities is the all-important factor, heart beat and blood pressure are secondary.

Of the opium habit I need say nothing; physicians are acquainted with its general features, but in this day and generation what may happen on account of this widening out of our therapeutic possibilities?

I believe that just as phenacetin, antipyrin and acetanilid, trional and the newer chloral combinations have so richly supplied the profession with weapons to attack pain and insomnia and have thereby lessened the danger of the opium habit, so the introduction of the new morphin derivatives will afford a like refuge for those patients for whom opium seems imperative. They will lessen the great amount of the morphin habit even if at times they may induce a habit of their own. That they do is no question, but I have dealt with this subject elsewhere.

To my mind the question of drug habits, so far as the physician is concerned, in large part resolves itself into a number of simple restrictions that we shall place on ourselves. These may be expressed as follows:

CONCLUSIONS.

1. Prescribe the drug which will do the work required to produce sleep or relieve pain, but let it be so graduated with reference to dosage and choice of remedy that it will be the least harmful if used steadily.

2. Keep our mouths tightly shut as to what we are using. Do not say, "Take 1 gr. phenacetin, 10 grs. of salol, $\frac{1}{2}$ gr. of codein." Give it to the patient if necessary, but do not under any circumstances permit him to know what it is. That is a medical question, and if the information is imparted its circle of pernicious activity radiates further than we can imagine.

3. Wage incessant warfare on the many pirates who provide all sorts of reliefs to the public, going directly to them through the lay press and the magazines.

4. In conclusion, let it be remembered that the introduction of newer drugs, rightly set forth by honest chemists and worthy clinicians makes most desirable accessions to our armamentarium; but that false pretense and economic robbery of an unsuspecting public deserve united condemnation and opposition.

DISCUSSION

ON THE PAPERS OF DRS. SPRATLING AND JELLIFFE.

DR. FRANK WOODBURY, Philadelphia—The author referred to the laws of China, but not to those of Japan, which present a marked contrast. The Japanese government apparently modeled its regulations of the sale of nostrums on the plan of Austria. It requires the registration of actual formulæ, and if any are found which do not correspond to the formula their sale is forbidden under penalty. Furthermore, if any compound or preparation is considered by the health board as injurious or dangerous, its sale is absolutely prohibited. Finally, those that are shown to be useful have their price regulated, so that the sick shall not be charged extortionate prices. These laws are not only in marked contrast to the absence of regulation in China, but they are also far in advance of our own.

Dr. H. C. WOOD, JR., Philadelphia—Most of the members of the American Medical Association have decided views on the

subject of self-medication and on the dispensing of medicine by the physician who thus invades the province of the pharmacist. I think that this practice is attended by great danger to both professions, and to the patients as well.

With regard to the suggestion of Dr. Spratling about instructing the laity, I think that it would be better to remove the beams from our own eyes before attempting to remove the mote from our brother's eye. For instance, many of the preparations now in use among physicians are nothing more than secret preparations. Only this afternoon, in coming into the room, I picked up a circular containing the advertisement of a preparation made by Rigaud and Chapoteaut, which is not only advertised to the profession, but is also advertised to the public in the daily papers for self-medication. The remedy for this evil is difficult to find. Dr. Spratling has suggested popular lectures as a means of instructing the public; perhaps some papers read before medical societies might afford a good introduction to the general discussion of the subject.

The final recommendation is not possible in the United States. The sentiment of the people would be against it as being antagonistic to American ideas. Much, however, can be done by the proper exercise of legislative control. The greater part of the protection to nostrums is due to the copyright laws. Probably the protection by copyright is more than is needed. If the profession would try to overcome the copyright protection of nostrums, it would accomplish a great deal toward breaking up this kind of self-medication by the laity.

DR. W. J. ROBINSON, New York City—The papers are both valuable and timely. The suggestion that physicians should contribute articles to be published in the daily papers is a good one; but to pay for their publication would cost too much. If the articles were well written, no doubt the papers would be glad to get them as matters of interest to their readers.

I am surprised to hear Dr. Spratling's remarks on the careful regulation of the sale of patent medicines in France. I have been in France myself, and that is not the opinion that I would have formed from my own observation. There is hardly an old wall in Paris that is not covered with advertisements of proprietary articles, and the little kiosks, or public urinals, are covered with directions for self-treatment for venereal disease and lost sexual power, the remedies to be bought at all pharmacists. Possibly the laws are on the books but are not enforced. Patent medicines are everywhere in evidence in Paris, even the illuminated kiosks at night are covered with announcements of new nostrums.

With regard to the remark about patients bearing pain much less than formerly, I believe this to be true. We can not go into the lying-in chamber without taking with us a bottle of chloroform or ether, and we use them for slight surgical operations, often, indeed, against our better judgment.

A remark has been made about physicians of the present day giving simple substances, instead of the complex preparations that were formerly in use. This is in the direction of more accurate and scientific prescribing. This has been recognized by the Pharmacopeia, and the physician now has at his command many articles in the form of active principles and simple substances that it was impossible to get formerly, except in combination. This is a fact known to every chemist; but the average physician is slow to understand it.

About the evils of self-drugging, everyone present can recall instances. I recall a patient who took, every day, sixty grains of phenacetin, and who claims that when he goes without it he suffers with headache. It is impossible to say whether the headache is really caused by the want of the phenacetin or whether a phenacetin habit has become established. Another patient who had a syphilitic headache when a young man, and was cured of it by the biniodid of mercury, for years afterward was in the habit of recommending this drug to his friends when they complained of having headache.

DR. W. L. DICKERSON, St. Louis—I have observed that, just at the close of the sessions for the last four or five years, there has been brought up for discussion this most interesting subject when there are very few to discuss it and very little time to do it in. It seems to me that, in trying to regulate

this matter of the use of proprietary preparations, we must begin with the profession itself. The pharmacists of my neighborhood can always tell when an agent for a drug manufacturing house is going around visiting physicians, because on the next day there will be several prescriptions calling for these special articles to be put up. Physicians know absolutely nothing of the composition of many of these preparations, and yet they take the statements of the agents, or the advertisements, as their authority. Certainly if a man makes a really valuable discovery or contribution to medical science, he should receive the advantages derived from the sale, but in that event he should patent the drug, and then we would know what it is that we use, for the composition must be made known of articles that are patented.

With regard to the habit of self-medication with narcotics, I think that there is a danger of such habits being formed if the physician places prescriptions of this kind in the hands of his patients indiscriminately. I am in the habit, when prescribing for a patient suffering with pain, to give a tablet of morphin from my hypodermic case and give a prescription for whatever else may be required. In this way, the patient gets the prescription without the opiate and there is less danger of forming the habit by refilling the prescription.

DR. W. P. SPRATLING, Sonyea, N. Y.—The tone of one of the speakers would seem to indicate that general legislation could not regulate the manufacture and sale of proprietary medicines in the United States. Such may be the case, but I think that the profession can secure some legislation if an effort is made. We can get laws to control the adulteration of food supplies, and I think the necessity for the protection of the public against injurious medicines is just as great in some instances as that of securing better food. The statements I made concerning the regulation of drugs in foreign countries was taken from consular reports made to the Department of State in 1898.

DR. S. E. JELLIFFE, New York—The proposition seems to me to be a very simple one, and one that could probably be settled in five minutes if we, as a profession, were all ideal ourselves; but we are not all ideal by any means. For instance, I have known this to occur: In New York City a very enterprising manufacturer devised a scheme to increase the sale of his particular produce. He issued pads, with printed prescriptions; each one had a coupon attached; for every one of these coupons representing orders sent to the drug store, the physician would receive 25 cents. If there are physicians of such character among us as to stoop to participate in a scheme like this, what can we say to the public or to the manufacturer of proprietaries?

COMMITTEE APPOINTED TO MAKE RECOMMENDATIONS.

DR. A. W. BAER, Chicago, moved that a committee of three members of the section be appointed on the subject of these papers, to report at the meeting of the section in 1903, making such recommendations as they think fit. The resolution was unanimously adopted and the chair appointed to serve on the committee, Drs. Baer, Robinson, and Wood.

A FURTHER STUDY OF THE INFLUENZA BACILLUS.*

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CHICAGO.

Of recent years such thorough study has been given by so many competent observers to systemic conditions produced by the *Bacillus influenza* in the human organism, that we may say we are fairly familiar with and able to recognize all the important points in the general symptomatology of influenza. There are special conditions, however, concerning which we are not so well informed, and to direct attention to what may be called "some of the atypical manifestations of the influenza

bacillus" is the purpose of this paper. The pathologic states of the mucous membrane which may be produced by the growth and development of this micro-organism on them are of sufficient gravity to warrant careful consideration. During the past five years a great many hundred cultures which were made from inflamed throat, nasal mucous membrane, eyes, etc., have been examined and it has been found that many of these local disorders were dependent on the action of the influenza bacillus, and not on the pyogenic bacteria. In a report published in the Bulletin of the Chicago Department of Health, January, 1899, I referred to some of the pronounced local disturbances which had been observed to be due to the Canon-Pfeiffer bacillus. The numerous observations made since that time confirm the statements then made. Attention was called to laryngeal, pharyngeal, nasal and ocular conditions—all severe types which were caused by the influenza bacillus.

In cases which were clinically laryngitis pure cultures of this organism were frequently obtained. The patients in the majority of instances presented symptoms which did not vary from those of acute catarrhal laryngitis. A feeling of rawness, tickling sensation, hoarseness and disposition to cough were the usual manifestations. Occasionally the symptoms were decidedly croupy in character, marked hoarseness, difficult respiration and a harsh, ringing cough were present. The mucous membranes were bright red, and in severe cases much swollen. The bacilli were found in the expectorated sputa and also in cultures made from these secretions.

In other cases which presented the usual clinical aspects of pharyngitis and tonsillitis the Pfeiffer bacillus appeared to be the exciting cause. Many times I have made bacterial examinations of exudations from mucous membranes which were congested, red and swollen and found no other organism. In many instances coming under observation the throat symptoms were so marked that a physician would feel justified in pronouncing the cases diphtheria, yet the Klebs-Loeffler bacillus was not found, although repeated examinations were made. Redness, swelling of the tonsils and well-developed membrane—manifestations certainly suggestive of diphtheria—have frequently been demonstrated to depend on the influenza bacillus. Indeed, cultures have been sent to the city laboratory many times for diagnosis which were taken from cases in which the probable clinical diagnosis was given as diphtheria by the attending physician, but instead of the diphtheria bacillus being found the influenza bacillus has been obtained in conditions almost pure. The power of this organism to excite such grave local disturbances is deserving of thoughtful inquiry and greater consideration than has heretofore been given to it. The proper treatment demands it. Diphtheria antitoxin administered to a patient suffering with a diphtheritic inflammation dependent on the Canon-Pfeiffer bacillus would fail to produce the desired results.

It would seem that when the influenza organism enters the system its field of action is not limited to some particular part of the body as that of many other pathogenic bacteria, but that it attacks and spends its force on any and every organ which offers least resistance. A throat may become the seat of severe manifestations and exhibit clinical symptoms—as already noted—differing not greatly from diphtheria, or in milder cases, from tonsillitis. The stomach and intestines do not escape this minute fungus, its activity in the one case producing gastritis, and in the other a condition simulating typhoid fever. It may advance along the eustachian tube and

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Hygiene and Sanitary Science, and approved for publication by the Executive Committee: Drs. Arthur R. Reynolds, George Cook and Heman Spalding.

enter the middle ear and excite otitis media. It may find its way into the pleural cavity and develop pleurisy, a pleural effusion or possibly an empyema. It may enter the nasal cavity and cause an acute nasal catarrh, or a "cold in the head," with all the attending unpleasant features.

In the bulletin above referred to attention was called, in a paragraph which I quote below, to certain eye disorders which were produced by the Pfeiffer bacillus.

It has occasionally been observed by physicians that when influenza is present in a household the eyes of some members of the family suddenly become inflamed, accompanied by severe pain, swelling and redness of the conjunctiva, with a profuse discharge of pus. In that the disorder differed materially from ordinary acute conjunctivitis it was suspected that the *Bacillus influenza* might have something to do with the diseased condition. Cultures were made from the discharges, and the suspicion was verified by finding great numbers of the influenza organism.

Since these conditions were noted many cases of a similar nature have been studied, and like results obtained. The attention of the patient is usually attracted to his eyes because of a feeling which causes him to believe some foreign body has lodged on the conjunctiva. An examination at this time reveals a slight redness of both ocular and palpebral membranes. Very rapid development follows so that within a few hours the disease is well established. Abruptness of onset, rapidity of development and shortness of duration are the characteristic features of all the cases, whether mild or otherwise. At their height the severer cases presented symptoms strongly suggestive of blennorrhea, or conjunctival diphtheria. Pain, redness and swelling of the conjunctiva, discharge of pus and sometimes membranes were present, but, under antiseptic treatment, all these distressing manifestations disappeared as quickly as they came, thus marking the illness as different from gonorrheal or diphtheritic conjunctivitis.

Many cases coming under observation are worthy of mention; three, however, will suffice to illustrate the manner of action of the influenza bacilli when attacking this organ:

CASE 1.—Mr. O., aged 26, consulted me during the last week of March, 1902, with reference to his eyes. A few hours previous he became conscious that one of his eyes had somewhat suddenly become painful, and that almost immediately the other organ had presented a similar state. Believing that some foreign substance was the cause of his discomfort, he had by various methods attempted to remove it, with the result that he aggravated his condition. An examination revealed the ocular and palpebral conjunctiva much ingested and very red—the congestion being most pronounced at the fornix and on the lids. A watery discharge, which was slightly cloudy, collected at the inner canthus, from which cultures were made on blood serum. After twelve hours' incubation a number of colonies had developed, which were found to be made up of influenza bacilli. Sublimate solution, strength 1/5000, was ordered to be used every three hours. Within twenty-four hours after treatment was begun there was decided improvement, and at the end of a week the disorder had subsided entirely.

This case is a type of the mild form of infection with the influenza organism. The lids were not swollen or edematous, and the discharge at no time became thick or purulent, but remained a watery character. The milder cases are met with much more frequently than the severe types described below, and because of the color of the conjunctiva are referred to as "pink eye." Whether the Pfeiffer bacillus is the active etiologic factor in all cases of so-called "pink eye" I can not say, but that it

holds a prominent place in the etiology of the majority of such infections I am inclined to believe.

CASE 2.—Mr. G., aged 47, while returning from his office, 5:30 p. m., March 7, 1902, became conscious that his right eye had rather suddenly begun to pain him. The sensation, as he thought, was due to particles of dust beneath the lids. Within an hour considerable swelling and redness of the conjunctiva and a watery discharge appeared. By 9 a. m. next morning—at which time I saw the patient—the pain was of a severe character, the swelling and edema so marked that the lids could be separated but little, and the discharge was of a thick mucopurulent nature. During the morning the left eye became involved, but did not present the severe symptoms that were present in the right. This less severe course I attribute to early treatment. The lids of this eye did not become swollen, the conjunctiva, however, both ocular and palpebral, were red and extremely sensitive, the discharge was watery in character, very little pus being present. Sublimate solution was used every two hours for twenty-four hours, with prompt and decided improvement. This same treatment was continued at less frequent intervals until the diseased state had disappeared, which was about five days in the case of the left eye, and eight days in the case of the right eye. Cultures made at the time of the first examination demonstrated the presence of the influenza bacillus.

A case of special interest has been observed by Dr. F. A. Phillips, Chicago, a report of which he kindly furnished me and which is herewith submitted:

CASE 3.—M. M., a little girl, aged 4, about 11 o'clock on the morning of Feb. 22, 1899, complained to her mother concerning her eyes. At this time a slight discharge was apparent, and the child seemed somewhat indisposed. During the next twenty-four hours the symptoms developed with great rapidity, so that, when the little patient was seen by myself at 6:30 p. m. on the same day, the eyes presented a serious inflammatory involvement. The lids were edematous and overlying; the integument was glazed and red, and the cilia matted with thick tenacious discharge. Only with difficulty could the child open the eyes, and then not to any extent. The swelling continued, and by 8 o'clock the upper lids became too heavy to be raised by the levators. By forcible separation and eversion false membranes covering both superior and inferior palpebral conjunctiva were exposed. The removal left small bleeding points. Beneath the superior ocular conjunctiva of both eyes a sub-conjunctival ecchymosis had appeared. There was no involvement of the cornea or iris. Mild constitutional symptoms were present—general languor, slight depression and low fever—which conditions were not observed in the other cases seen during the year.

Before instituting treatment cultures were made from the false membranes and surfaces beneath. These were examined by Dr. Wynekoop of the city laboratory, who reported the negative finding for all pathogenic bacteria except the bacillus of influenza, which seemed to be present in a pure culture. On the 24th inst., and again, on the 25th, the treatment was discontinued for three hours and cultures made, which proved to be growths of the influenza organism.

The treatment was antiseptic in nature, and soon after its institution the conditions improved. The membranes reformed within five or six hours after their removal, but quickly disappeared on the use of sublimate solution. Recovery progressed steadily and by the end of the seventh day the edema had all subsided, the ecchymosis had faded, and only a slight hyperemia and thickening of the conjunctiva remained, which entirely disappeared soon after. Throughout its entire course the case was one presenting an unusual symptomatology. All the clinical manifestations—the sudden, severe beginning, the rapid development, and the comparatively rapid disappearance of the acute violent symptoms under treatment, without complication or sequelæ—were at variance with any other eye affections. These facts, together with the bacteriologic findings, led to a diagnosis of influenza.

The case reported by Dr. Phillips is one of the severe types and presents several interesting features which were not present in the other cases described, yet in general it followed the same course.

It deserves mention, as a matter of no small interest, that the clinical course of this local disease coincides in all the essential points with systemic or general infection, and that the duration and departure of the clinical conditions are in harmony with all the vital phenomena manifested by the influenza organism. Thus, the life cycle of the bacillus is short, a culture thrives but a few days, the resistance to harmful agencies is feeble, and under the most favorable surroundings the organism soon dies. Herein, perhaps, we find an explanation for the rapid recovery of the disordered eye when treated antiseptically. In view of what has been observed it appears that we have to do with a pathologic condition which differs materially from other acute inflammations of the eye. And in view of its abrupt and somewhat violent onset, its rapidity of development, its shortness of duration, and in view of the repeated findings of the bacillus of influenza, it would seem that we are justified in making a diagnosis of influenza ophthalmia.

In the *New York Medical Journal* of Feb. 1, 1902, appears a translation of an extract of a paper published by Dr. F. Rymowitch in the August, 1901, number of *Roussky Archiv Pathologiyi, Klinicheskoy Meditsinyi Bacteriologiyi*. It appears that this observer has recently made a comparative study of the *B. influenza* and the bacillus of Koch-Weeks, and concludes they are one and the same organism. He finds that they are identical in morphologic, biologic and pathogenic characters. Both produced intoxication without a general infection. The most conscientious study did not reveal to him any differences between the bacteria, and he therefore believes that the bacillus of acute contagious conjunctivitis and that of influenza are the same. When attacking the mucous membranes of the respiratory tract the influenza bacillus produces influenza, and when affecting the mucus of the eyes produces acute contagious conjunctivitis, which disorder, according to Rymowitch, is the same as that produced by the Koch-Weeks bacillus. Not having had an opportunity to make a comparative study of these two organisms, I am not in a position to confirm or refute the observations made by Dr. Rymowitch. The subject is an interesting one, and because of its importance deserves further consideration, which I hope to give it in the near future.

THE FLY AS A CARRIER OF TYPHOID.

AN INQUIRY INTO THE PART PLAYED BY THE COMMON HOUSE FLY IN THE RECENT EPIDEMIC OF TYPHOID FEVER IN CHICAGO.

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CHICAGO.

During July, August and September of 1902 there was an unusually severe epidemic of typhoid fever in Chicago, which raised the death rate to 402 from this disease alone, as against 212 during the same three months of the previous year.

CHICAGO'S WATER SUPPLY.

The water supply of Chicago comes from the lake and is collected at five pumping stations: the Hyde Park station, which is two miles from the shore; the Fourteenth Street, four miles from shore; the Carter Harri-

son, two and a half miles; the Chicago Avenue, two miles, and the Lake View, two miles out. The Carter Harrison station is considered the best, the Fourteenth Street is almost as good. Specimens of water from each station are examined daily in the laboratory of the Chicago Board of Health and a bulletin as to the condition of the water at each is published in the daily papers. The state of the water varies greatly from day to day, and the practical value of these daily bulletins becomes somewhat problematical when one considers that twenty-four hours must always elapse between the collecting of the water and the published report, so that people who read on Tuesday morning that the water at a certain station is bad and take precautions accordingly are a full day late, for they were drinking the bad water on Monday. On the whole, such a statement as is made at the end of the week by the health department, "the water at this station averaged 60 per cent. good for the week," is really misleading, since nobody can ever know until too late which days made up the 40 per cent. bad. As a usual thing the water is worst when the rainfall is greatest, the sewage being carried farther out into the lake and contaminating the water at the intakes, except when there is the fortunate coincidence of light easterly winds, which, without stirring up the bottom, keep the sewage in toward the shore.

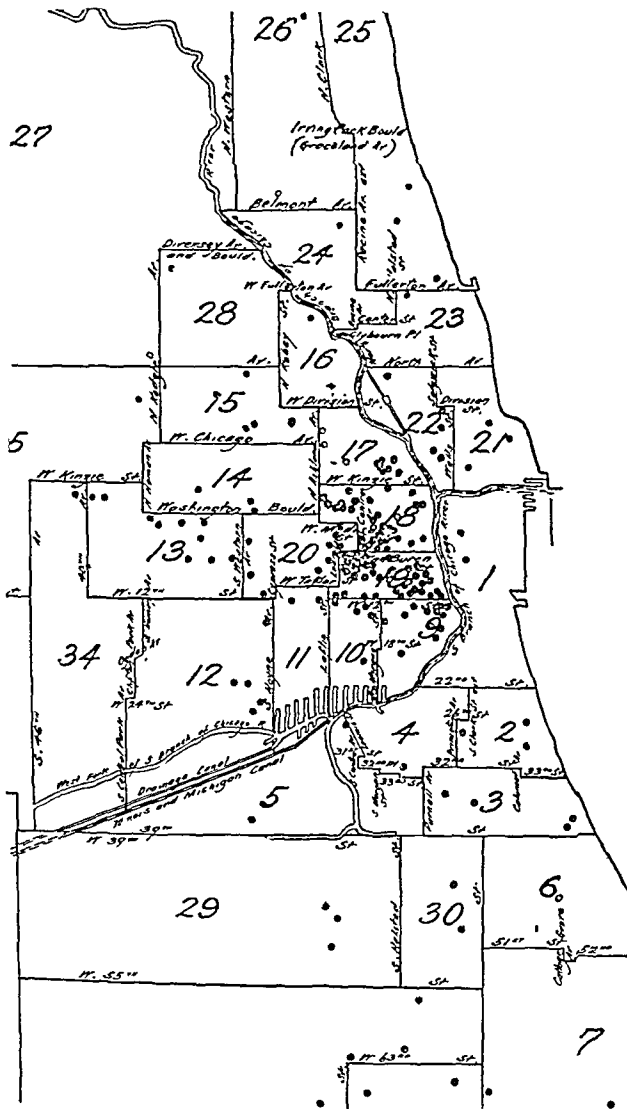
In discussing the causes of this greatly increased mortality from typhoid fever, Dr. A. R. Reynolds,¹ commissioner of health, speaks as follows:

"At the time" (the early summer) "there was nothing in the condition of the water to cause alarm. Notwithstanding the heavy rainfall of the previous months, the supply from all sources averaged 72 per cent. good (by 'good' in the laboratory characterization is meant a water free from pathogenic organisms, the colon group). But in the early part of August the typhoid deaths suddenly jumped up from a previous weekly average of 8.8 to 28 in the first week of August, to 44 in the second, and to 53 and 51 in the third and fourth weeks, with a total of 194 for the month, as against a total of 44 for July. As already stated, the water supply in July and previously was not of such a character as to account sufficiently for the increase of typhoid; but a study of the meteorologic conditions of the period beginning in October, 1901, reveals what are believed to be strong contributory causes. October, November and December, 1901, and January and February, 1902, were the driest five consecutive months on record in 53 years. During the period only 6 inches of rain fell, instead of the average 11.84 inches. In November only 0.85 of an inch instead of the average 2.68, and in January only 0.64 instead of the average 2.07. There was no sewer-flushing rainfall during the entire period, and the city sewer flushing, always inadequate, was wholly suspended in January on account of the lack of funds. The sewers were congested with filth, of which typhoid stools formed a component part, and the surface of the earth, in city and country alike, was covered with the five months' accumulations. The water supply was, however, uniformly good, since there was little sewage movement. From March to July inclusive was the wettest season on record—a total precipitation of 23.73 inches instead of the usual 7.87 inches. The sewers were repeatedly flushed out, and the accumulated surface filth was washed away into streams, ponds and the lake. Under ordinary circumstances the water supply would have been repeatedly and grossly polluted. Fortunately, the wind movement during this wet period was unusually light and its prevailing direction was from the east—thus keeping the sewage-laden shore waters away from the tunnel intakes. In August a succession of high variable winds set in, the strongest being from the west. The lake bottom was vigorously stirred up by high wave action, the sewage was drifted to the intakes, and the water supply from all sources became so contaminated that it averaged only 38 per cent. good for the month.

1. Chicago Medical Recorder, 1902, vol. xxIII, p. 219.

CAUSES OF TYPHOID INFECTION ASIDE FROM POLLUTED WATER.

This pollution of the water supply was undoubtedly the greatest causative factor in the epidemic of the past summer, but there are one or two subsidiary factors which are not brought out in the report of the board of health, and which yet may serve to explain the peculiar localization of this epidemic. The accompanying Map 1² shows that a comparatively small area on the West Side was the region most severely affected. Within the limits of the Nineteenth Ward, which contains only one thirty-sixth of the total population of the city, there were between one-sixth and one-seventh of all the deaths



Map 1.—Showing the central part of Chicago and the approximate locations of typhoid fever deaths in August, 1902. (For map showing the entire city with the source of water supply and the sanitary drainage subdivisions, see THE JOURNAL, Dec. 20, 1902, p. 1563.)

from this disease. This part of the city is inhabited largely by working people. It contains one of the largest Bohemian colony, the northern end of the Jewish quarter and the western part is chiefly American-Irish. So far as the general intelligence of the inhabitants is concerned, their knowledge of the laws of hygiene, their general housing conditions, cleanliness, overcrowding, etc., this part of the city does not differ from the other

semi-foreign quarters, yet it suffered much more than any in this epidemic. Evidently there must have been some local conditions which favored the spread of the infection. The drinking water alone could not be responsible, for this part of the city is supplied from the Chicago-avenue and Fourteenth-street tunnels, the same water supply as that for the whole region between 47th and Lake streets, Canal street and Western avenue. Nor could the milk be chargeable, for though in this neighborhood the milk is often badly diluted, yet it averaged quite as good as that supplied to a prosperous residence district to the west, as shown by analyses made of the milk of both districts by the University of Illinois in 1898.

FAULTY SEWAGE CONDITIONS.

To those who studied the distribution of the cases of typhoid fever it soon became evident that the number was greatest in those streets where removal of sewage is most imperfect. This is an old part of the city, the sewers in many of the streets were laid before the great fire, at a time when the neighborhood was more sparsely settled and when usually not more than one family occupied each house. Adequate at that time, they are far from adequate now, and it takes only a moderate increase in the rainfall to make the sewage back up into vaults and closets, while clogging is of common occurrence in dry weather. The yards and closets are often below the level of the street and are therefore easily overflowed. Last spring during the flooding rains it was no uncommon thing to see one of these yards, from six to fourteen feet below the level of the street, covered with several inches of foul water which in the neighborhood of the privy was distinctly sewage-contaminated. In this way the earth of the yards and that under the basement tenements became soaked with diluted excreta.

This condition of things is made possible by the primitive arrangements for the disposal of dejecta which prevail in this part of the city. Two of the residents of Hull House, which is situated almost in the center of the typhoid district, made a careful house-to-house investigation, noted the conditions as to drainage in each house and also the number of cases of typhoid fever which had appeared in each during the three months in question. The results are shown in the accompanying Maps 2 and 3. It may be remarked in passing that there was no other way of ascertaining these facts except by such a house-to-house canvass. There are no records in Chicago of sewer connections which antedate the great fire. The records were destroyed at that time and have never been replaced.

It will be seen from the maps that the methods of disposal of excrement in this neighborhood have been divided into five classes. The first class includes such equipment as complies with the law: plumbing with adequate water-flushing, traps and a periodically cleaned catch basin; in other words, modern sanitary plumbing. This form of plumbing was made obligatory for all buildings by an ordinance passed in 1896. The second class includes imperfect plumbing or legal plumbing so much out of repair that the excrement is not completely carried away. In several instances very bad leaks were found, the fluid overflowing on to the floor, and in two instances trickling through the ceiling and dripping into the tenement below.

The third class includes out-of-doors water closets, whose water supply is the rain water from the roof and the wash water from the kitchen sink. This is a fairly safe arrangement when the catch basin is kept clean and the sewer does not back up. The law requires catch-

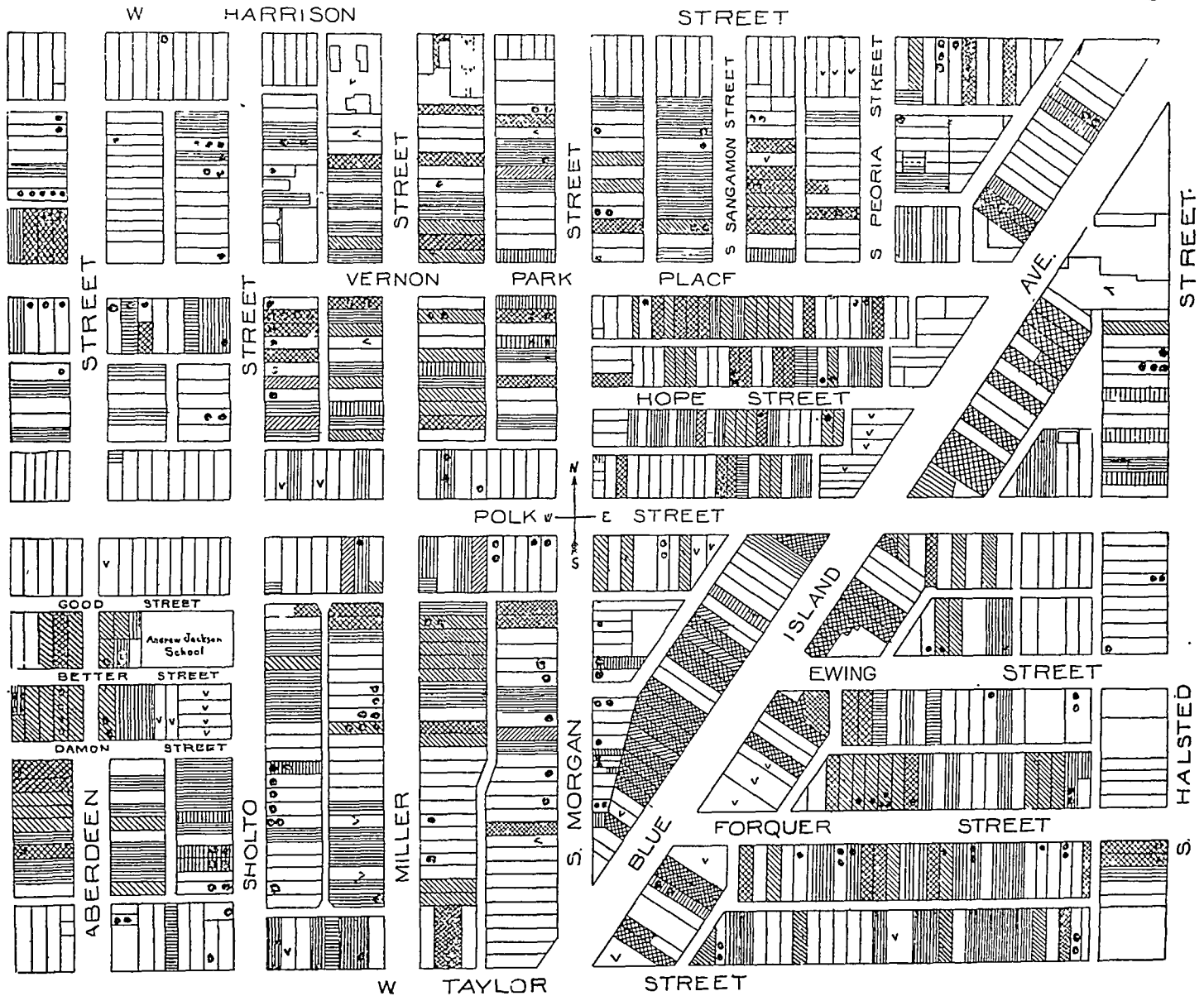
2. Prepared by the board of health and kindly given me by Dr. Reilly, Assistant Commissioner of Health.

basins to be of easy access and frequently cleaned, but many of them are buried deep in the earth and uncovered only when the accumulation of filth has become unbearable.

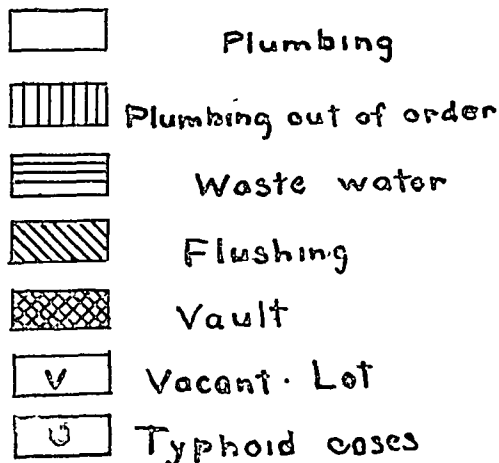
The fourth class includes the privy vaults with sewer connections but without water supply. These are cleaned either by flushing with a hose connected with the hydrant

month, but in the houses of absentee landlords the place may be flushed only once in three years or more. In some places it is impossible to ascertain whether or not there is any sewer connection, as no cleaning has been done in the memory of the oldest tenant.

The fifth class includes the old-fashioned country privy; no sewer connection, simply a hole in the ground.



Map 2.



Explanation of Maps 2 and 3.

or by a scavenger. If cleaned often enough by flushing the sewer connection can be kept open; otherwise the night soil must be removed by a scavenger. It can be seen that there is room for great variation in this class. When the landlord lives on the premises he is apt to flush his privy at least twice a year, sometimes even once a

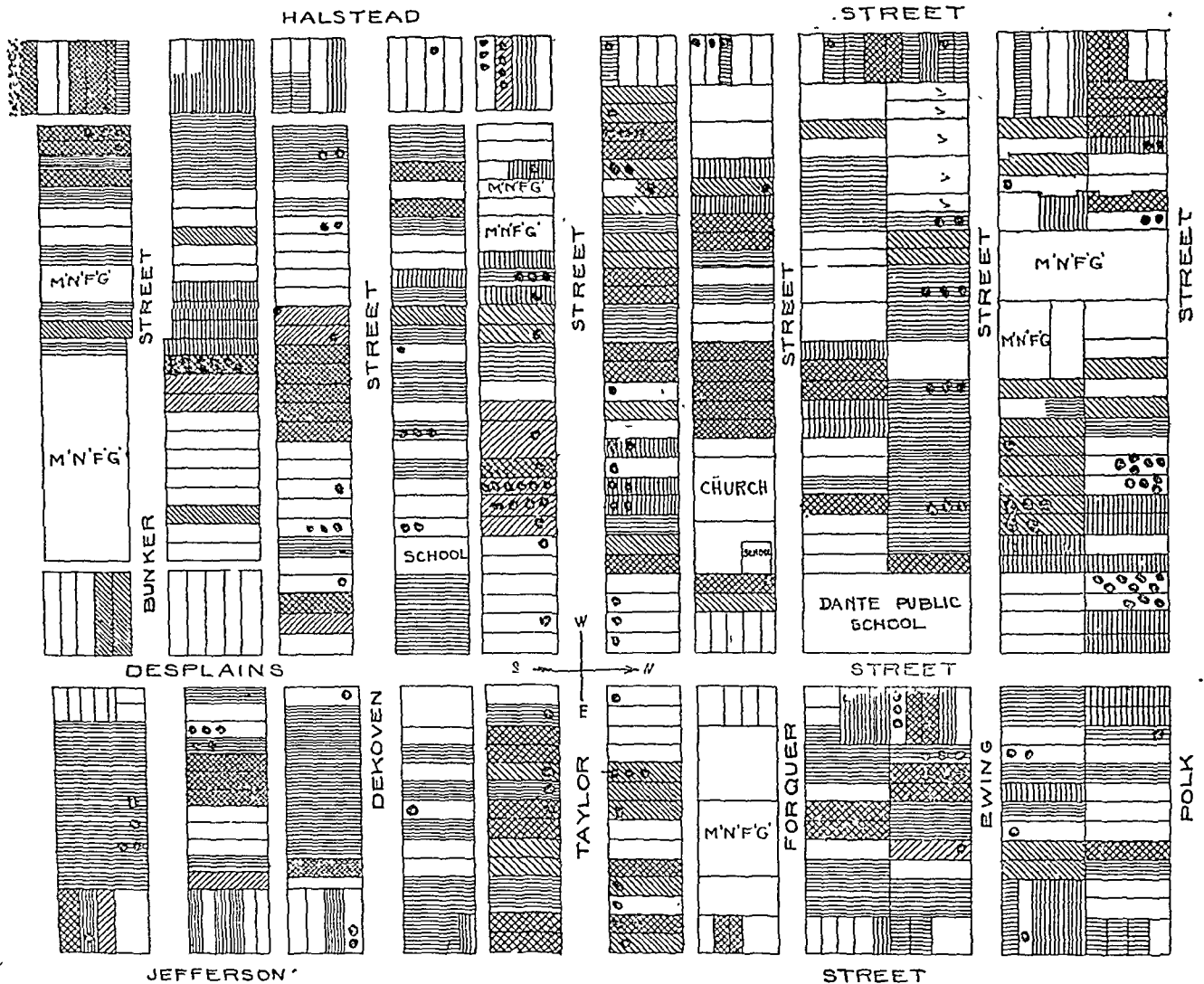
It is often full and indescribably filthy, in spite of all efforts on the part of the tenants to keep it at least outwardly clean.

As can be seen from the maps, the cases of typhoid fever were not more numerous, on the whole, in houses where the disposal of fecal matter is most defective. Houses with good plumbing which are close to those with badly-drained cesspools are just as apt to have cases of typhoid as are the badly-drained ones, e. g., Morgan street on the east side. All that can be said is that in those areas which have many such places there was more typhoid than in those in which conditions are better. (Compare Bunker with Taylor street, for instance, Polk street east of Halsted with Polk street west of Halsted, Harrison with Sholto.) It must be remembered that the character of the plumbing is due largely to the newness of the building and to the conscience of the landlord, and is not a measure of the standard of living of the tenants.

The statistics which the Hull House residents were able to gather as to the number of cases of typhoid fever are as accurate as such statistics ever can be. No cases

were entered on the maps which had not had a physician's diagnosis, and inasmuch as the physicians of the neighborhood testified that there was an unusually large number of cases of "walking typhoid," many of which very likely never saw a physician, it is probable that the number of cases, as given in the maps, is below rather

Taylor street (Italian). Old-fashioned privy; no sewer connection. One of five privies in a yard between a 4-story front tenement and a 3-story rear tenement. While we were inspecting it, a woman came down with a vessel filled with discharge from a typhoid patient, which she emptied into the vault. No disinfectant was used.



Map 3.

than above the actual number. It was also impossible to show on the maps the actual condition of the various closets. Cesspools filled to overflowing and leaking are necessarily represented by the same shading as moderately full and periodically cleaned cesspools, to avoid overcomplicating the maps. A few extracts from the note-books of the Hull House residents will give an idea of some of the conditions found:

DeKoven street (Jewish). Vault, connected with the sewer, but full. Basement full of sewage contaminated water from backing up of sewer.

Law avenue (Greek). Seventy-six persons using 3 small closets under the house; very filthy; apparently no sewer connection.

Bunker street (Bohemian and Polish). Unconnected vaults; very foul; 10 cases of typhoid fever, with 4 deaths in this tenement.

Law avenue (colored). Connected with the sewer, but out of order; full to the floor. Boards at back are broken away so that cesspool is quite exposed.

Ewing street (Italian). Cesspool, said to have sewer connection, but full and running over, so that stream of sewage runs down the yard.

Aberdeen street (Irish). One large vault, used by 16 families; very foul-smelling; unconnected with the sewer. This was cleaned by a scavenger during August, and the filth left standing in an open barrow in the alley between two houses for a week. It was so offensive that the tenants in these two houses were obliged to keep their windows on that side closed. Complaints to the health department and garbage inspector were fruitless, and finally the personal influence of a physician prevailed over the landlord and he removed it, but not until it had stood there during a week of warm weather when, naturally, the place swarmed with flies. There were five cases of typhoid fever in each of the two houses next to the alley.

INFECTION BY THE HOUSE FLY.

Now if there is any causative relation between the condition described above and the distribution of the cases of typhoid fever the agency of flies at once suggests itself as a possible factor. It is true that germ-laden dust blown by the wind may also be a mode of conveyance of the infection. The typhoid bacillus has been shown by Firth and Horrocks to retain its vitality in dry soil for twenty-five days, by Uffelmann for over sixty. However, it was only after the middle of August

that this agency could have come into play to any great extent, for up to that time there had been constant rains and there was practically no dust.

The importance of the common house fly in the spread of typhoid infection was emphasized by Majors Reed, Vaughan and Shakespeare in their report on the "Origin and Spread of Typhoid Fever in the U. S. Military Camps During the Spanish War in 1898." They state that in many of the camps:

Flies were undoubtedly the most active agents in the spread of typhoid fever. Flies alternately visited and fed on the infected fecal matter and the food in the mess tents. More than once it happened when lime had been scattered over the fecal matter in the pits, flies with their feet covered with lime were seen walking over the food. Typhoid fever was much less frequent among members of messes who had their mess tents screened than it was among those who took no such precaution. Typhoid fever gradually died out in the fall of 1898 in the camps at Knoxville and Meade with the disappearance

can not be accounted for by infected water or milk; also puzzling instances of individuals, who have taken all usual precautions during an epidemic, and yet fall prey to the disease. These cases may best be explained by assuming that the food became infected by flies which had previously fed on typhoid discharges.

In a recent number of the *British Medical Journal*⁴ there is a report by two British army surgeons, Majors Firth and Horrocks, of an investigation into the "Influence of Soil, Fabrics and Flies in the Dissemination of Enteric Fever." I quote simply the last part of the paper, that which deals with flies.

These investigators had adult and larval flies placed in a specially-constructed cage in which were also placed Petri dishes containing a mixture of syrup, a fresh typhoid stool and a fresh culture of typhoid bacilli, and sometimes the whole was lightly covered with earth. After feeding on this the flies would settle on other Petri

TABLE OF CULTURES BELONGING TO COLON-TYPHOID

	Morphology.	Gelatin Plate After Forty-eight Hours.	Agar Plate (Hiss) After Twenty-four Hours.	Potato.	Gel. Stab.	Agar Streak.
Typhoid control No. 15.	Short, slender rods, rounded ends, sporeless, very actively motile; decolorizing by Gram.	Deep colonies are small, yellowish, granular, round. Surface colorless, delicately veined, edge lobulated. Center turning yellowish.	Deep colonies are greenish, bristly or thready, small. Surface colorless, granular, greenish center.	Moist, slightly slimy, colorless, growth, scanty.	Delicate, granular, growth along stab, thin, greenish on surface, not spreading much. No liquefaction.	Whitish, shining streak, even round'd borders, spreading very little. White precipitate in water at bottom of tube.
A 1 from vault	Same	Same	Same	Same	Same	Same
A 2 from yard	Same	Same	Same	Same	Same	Same
A 3-a from yard	Same	Same	Same	Same	Same	Same
P 1-a from yard	Same	Same	Same	Same	Same	Same
P 2 from sick room.	Same	Same	Same	Same	Same	Same
A 3-b from yard	Same	Same	Same	Moderately abundant growth, slightly yellowish. Potato brown in two days.	Same	Thin, grayish, spreading more than 15.
P 3-a f'm vault	Same	Same	Same	Same. Potato brown in 24 hours.	Same	Same
A 3-c from yard	Same	Same	Same	Like 15	Same	Same
P 3-b f'm vault	Not so actively motile as 15.	Same	Same	Dry, granular, brown growth, all over surface.	Same	Same
A 4 from yard.	Like 15	Same	Same	Like 15	Same	Same
P 1-b from yard	Same	Same	Deep colonies brown, granular, large, smooth-bordered. Surface, large, granular, brown.	Same	Same	Like 15
P 3-c f'm vault	Not so actively motile as 15.	Same	Same	Abundant, slimy, colorless growth.	Same	Rather more abundant than 15.

of the fly, and this occurred at a time of the year when in civil practice typhoid fever is generally on the increase. . . . The first pits at Knoxville contained, before the first twenty-four hours had passed after the arrival of the troops, fecal matter infected with the typhoid bacillus. Flies swarmed everywhere. Instead of abating, the disease increased. The soldiers were using the same water used exclusively by the inhabitants of West Knoxville, and among the latter there was not at that time a case of typhoid fever. Certainly the disease was not disseminated through the drinking water.

Dr. H. A. Veeder,³ writing on the same subject in the fall of 1898, said that in his opinion flies were more important agents in the spread of typhoid infection in the military camps during the late war than were drinking water or milk.

There have been several mysteriously spreading epidemics, in farming regions, for instance, where the houses are far apart and where the spread of the disease

dishes which contained sterile culture medium. The typhoid colonies were recovered in every instance.

EXAMINATION OF FLIES.

Interesting as these results are, they do not really prove the point in question, the agency of flies in the dissemination of typhoid infection. They show, to be sure, that flies can take up typhoid bacilli from fresh cultures and then replant them a few minutes after on sterile culture medium, but it remained to be proven that flies having fed on mixed discharges, which have lain for some time in privy vaults, can subsequently crawl over various surfaces and yet finally deposit the living typhoid bacilli on foodstuffs at a considerable distance from the original place of infection. In order to do this, it would be necessary to catch the flies on the spot and make the bacteriologic examination without having subjected them to any artificial conditions.

3. Medical Record, 1898.

4. Brit. Med. Jour., Sept. 27, 1902.

Two places were selected in the neighborhood of Hull House as specially favorable for such an examination. The first was an unconnected privy on Polk street into which the discharges from two cases of typhoid fever were being thrown without any attempt at disinfection. The vault was either very shallow or very full, for the dejecta lay within three feet of the opening and had caught on the projecting scantling within a foot of the opening. The flies⁵ caught within the vault, on the fence of the yard and inside the sick-room of one of the patients, which was also used as a kitchen, were dropped into test tubes containing culture medium and allowed to remain there for periods varying from fifteen minutes to twelve hours. Eight tubes were thus inoculated, three of which contained plain bouillon in which the flies were drowned, three the slightly acid gelatin-agar of Hiss and two the potato-water gelatin of Holz. In two of the bouillon tubes, the one from the sick-room and the one

GROUP, OBTAINED FROM TUBES CONTAMINATED BY FLIES.

Litmus Milk.	Litmus Whey.	Lactose Bouillon.	Glucose Bouillon.	Saccharose Bouillon.	Glucose Agar.	Indol in Peptone Bouillon. 7 days at 37° C.	Agglutination.
Faintly acid at the end of twenty-four hours. No coagulation after eight weeks.	Faintly acid after twenty-four hours and after four weeks. Hardly at all cloudy.	Uniformly cloudy. No pelticle, no acid, no gas.	Acid, no gas.	No acid, no gas.	Uniformly cloudy. No gas.	—	1-200+ 1-400—
Same	Same	Same	Same	Same	Same	—	1-200+ 1-400—
Same	Faintly acid in twenty-four hours. Neutral in twelve to sixteen days, then alkaline.	Same	Same	Same	Same	—	1-200+ 1-150+ 1-250—
Same	Like 15	Same	Same	Same	Same	—	1-100+ 1-250—
Same	Same	Same	Same	Same	Same	—	1-200+ 1-400—
Same	Same	Same	Same	Same	Same	—	1-100+ 1-250—
Alkaline in twenty-four hours. Dark blue in two weeks. Persistent, growing translucent.	Alkaline in twenty-four hours. Persistent. Slightly cloudy.	Same	No acid	Same	Same	—	1-25—
Same	Same	Same	Same	Same	Same	—	1-25—
Faintly acid in twenty-four hours. No coagulation. Alkaline on fifth day, persistent. Bleaches finally.	Faintly acid in twenty-four hours. Alkaline on ninth day. Cloudy.	No acid	Acid, gas	Same	Gas, not abundant.	—	1-25—
No acid. Alkaline on third day. Persistent. Bleaches finally.	Faintly acid in twenty-four hours. Alkaline on fourth day. Cloudy.	No acid	Acid, gas	Same	Same	—	1-70+ 1-150—
Acid in twenty-four hours. Coagulating on third day. Alkaline on fifth day. Persistent.	Acid in twenty-four hours. Alkaline by ninth day. Cloudy. Persistent.	Faintly acid in twenty-four hours. Alkaline by third day, persistent.	Acid, gas	Same	Same	Slight + reaction.	1-25—
Acid in twenty-four hours. Coagulating on third day.	Acid in twenty-four hours. Cloudy.	Acid gas	Same	Acid, gas	Abundant gas.	+	1-25—
Acid in twenty-four hours. Coagulating on third day.	Same	Acid gas	Same	Acid, gas	Abundant gas.	+	1-25—

from the yard, a bacillus was isolated which corresponds culturally with the typhoid bacillus, and which agglutinates in dilutions of 100 to 200 with the serum of immunized animals. In one of the tubes inoculated by flies from the vault a bacillus was isolated closely related to but not identical with the typhoid bacillus, belonging apparently to the group intermediate between the typhoid and colon groups.

The second place chosen was a yard on Aberdeen street containing one large, full and filthy vault, not connected with the sewer. This is used by sixteen families. Flies from the three privies built over this cesspool were used to inoculate two tubes of bouillon and one each of agar-gelatin and of potato-gelatin; other flies from the fence of the yard and from the walls of the two houses bounding the yard, at varying distances from the vault, were dropped into two tubes each of bouillon, gelatin and

agar. From three of these tubes the typhoid bacillus was recovered; that is, from one bouillon tube inoculated with flies from the privy and from one bouillon and one agar tube inoculated with flies from the walls of the house and from the fence. From another bouillon tube with flies from the fence a bacillus was isolated belonging to the intermediate group above referred to, and another also of this group was isolated from one of the bouillon tubes which contained the typhoid bacillus.

At the time the collection was made there were no fresh typhoid discharges being emptied into this vault, so that the presence of living typhoid bacilli on the legs of the flies apparently proves either that the bacilli already in the vaults were living and multiplying, or that the discharges of the recovered cases still contained typhoid bacilli. In the Polk-street house the flies caught in the sick-room are especially interesting. This room was also used as the kitchen and at the time the collec-

tion was made the table was covered with food on which could be seen flies both living and dead.

The conditions found at these two places are repeated over and over again in this neighborhood, and when one considers that, in addition to the privies and defective plumbing, there are the sewer-infected back yards, that food is kept more or less exposed, not only in the houses, but in the groceries and fruit stands, that the houses are not furnished with screens, it can easily be seen what an important part the house fly may play in the spread of typhoid infection in such a neighborhood. It can also be seen that this is one factor which does not come into play to such an extent in more well-to-do parts of the city, where screens and good plumbing are the rule, or in newer parts of the city where the excrement is properly disposed of. There are, as was stated above, no available statistics as to the number of privies still in use in Chicago, but Dr. Reilly, assistant commissioner

5. In all cases the common house fly, *Musca domestica*.

of health, is of the opinion that more than half of them are within the Nineteenth Ward. It seems, therefore, not unwarranted to assume that the concentration of the typhoid fever in this particular quarter of the city during the late epidemic was due to the spread of the bacilli by flies from the undrained or imperfectly drained cess-pools, the leaking closets and the infected earth of the yards.

BACTERIOLOGIC EXAMINATION OF THE FLY TUBES.

As already stated, the flies caught at the different places were dropped into six tubes of bouillon, six of potato-water gelatin and six of Hiss' agar-gelatin. They were allowed to walk over the solid, slanted media, sometimes for fifteen to thirty minutes only, sometimes from one hour to twelve hours; others were drowned in the bouillon tubes. The flies were then removed with sterile forceps and the tubes set aside for twenty-four hours, the gelatin tubes at room temperature, the others in the incubator. All of the gelatin tubes liquefied in forty-eight hours to such an extent that they were useless. The agar tubes, with the exception of two in which the flies had remained not more than half an hour, were covered with a thick slimy growth, loopfuls of which were transferred to bouillon and the plating was done from the latter. The two in which the growth was not so abundant showed two or three black specks of excrement in each, and the colonies growing at these points were carefully examined, but yielded only sarcines.

The plating media used were the potato-water gelatin, the agar-gelatin of Hiss, and Löwenstein's .05 per cent. carbol-gelatin. Plates were made from the twelve tubes on all these media; and five of them were found so greatly contaminated as to be worthless. Sarcines, yellow, white and orange, liquefying protei, subtilis, megatherium, Zopfii, mesentericus and mycoides were all identified by their colonies, and the attempt to isolate the colon group from among them failed. Better success was obtained from the remaining five bouillon and two agar tubes. Two of them (A 1 and P 1) were so little contaminated with liquefying varieties that the original Holz plates remained usable until they dried. This medium was somewhat disappointing in the other cases, for the liquefying varieties often grew with apparently undiminished vigor, causing complete liquefaction by the time the typhoid colonies should begin to be characteristic. The carbol-gelatin was still less satisfactory, for the addition of .05 per cent. carboic acid did not prevent the growth of the liquefying forms, but only retarded them; but it also retarded the growth of the typhoid colonies which often at the end of three days showed merely as clear droplets, not distinguishable from colon, or from a slowly liquefying motile bacillus. Moreover, the typhoid surface colonies never took the characteristic grape-leaf appearance, but were always round with smooth edges. On the whole, the agar-gelatin of Hiss gave the most satisfactory results. The tiny, greenish, bristly or thready colonies which developed in eighteen hours were easily distinguishable from the larger, brown, smooth-bordered colon colonies. The differences became more marked in forty-eight hours, for the typhoid colonies increased hardly at all in size, while the colon colonies grew much larger. The acidity of the medium retarded the growth of other forms.

Hiss⁶ has recommended the transplantation of typhoid-like colonies to a semi-solid "tube medium" (containing glucose), in which, he claims, the typhoid bacillus is the only one causing a diffuse cloudiness without forma-

tion of gas, and in this way a rapid positive diagnosis can be made. In my experience this served very well to distinguish the typhoid bacillus from the colon and from various glucose-fermenting intermediate forms, but not from a non-sugar-fermenting bacillus which produces an early and persistent alkalinity in milk and which I have supposed to be identical with the *Bacillus faecalis alkaligenes* of Petruschky. This bacillus caused a diffuse cloudiness in the tube medium, and inasmuch as it resembled the typhoid bacillus morphologically and in its growth on gelatin, agar and bouillon, it could be distinguished from the latter only by its rather more abundant brownish growth on potato and its failure to ferment any of the sugars or to cause even a transient acidity in milk or litmus whey.

Colonies of the colon bacillus were found on every plate, as was to be expected, and two organisms were isolated simply for purposes of comparison. Several intermediate forms were also isolated from the Hiss plates under the supposition that they were typical typhoid colonies, until the formation of gas in glucose media proved their nearer relation to the colon group.

The following is a diagram of the twelve organisms which were isolated from the fly tubes, and of a typhoid bacillus obtained in the laboratory of Rush Medical College from the blood of a typhoid patient and used as control. Those marked A were from the tubes inoculated at Aberdeen street; those marked P, from Polk street. The organisms A 3-c and P 3-b seem to belong to the group intermediate between the typhoid and colon bacilli, resembling the typhoid morphologically, in their growth on potato, gelatin and agar, and in their failure to ferment lactose or coagulate milk; resembling colon in the fermentation of glucose with formation of gas as well as acid, although not as abundantly as does colon. To this group belong the *B. enteritidis* of Gärtner, and the organisms isolated by Widal, Gwyn, Cushing, Schottmueller, Longcope, Hewlett, Johnston, Kurth, and recently Sion and Negel. There are minor variations in the growth of these organisms on culture media as they approach now the typhoid type, now the colon, but in the main the class is well defined.

P 3-b, with its dry, granular, brown growth on potato, early and persistent alkalinity in milk and litmus whey and its slight fermentation of glucose, corresponds closely with the bacillus isolated by Sion and Negel from the blood of five patients and from the well-water in a house epidemic of typhoid-like character. A 3-b and P 3-a ferment no sugars and produce an early and increasing alkalinity in milk and Petruschky's whey, and a relatively abundant growth on potato, characteristics which correspond to those of the *B. faecalis alkaligenes* of Petruschky.

P 3-c and P 1-b are typical members of the colon group, except that P 3-c does not grow characteristically on potato. A 4 should, perhaps, be relegated to the intermediate group, but differs from all those reported, except one of Schottmueller's, in coagulating milk and forming a small amount of indol. It might be regarded as a feebly-growing organism of the colon group were it not for the failure to ferment lactose—the transient faint acidity is soon followed by a persistent alkalinity—and the production of a persistent alkalinity in milk and litmus whey.

The serum of an immunized rabbit was used to test the agglutinability of these organisms. The control agglutinated in a dilution of 1-200, not in a dilution of 1-400. All of the typhoid bacilli isolated from the fly tubes failed to agglutinate in dilutions of 1-400, two

would agglutinate only in 1-100 dilution, and one in 1-150. P 3-b agglutinated in a dilution of 1-70, which is really greater than the dilutions used in the ordinary clinical application of the agglutination test, yet this organism proved by its growth in sugar media and milk to belong to the intermediate group. This agglutinability with typhoid immune serum on the part of an organism of the intermediate group has been observed several times (Durham, Klinger). Durham for this reason questions the value of the agglutination test as compared with cultural tests, for he has even found colon bacilli which agglutinated with this serum, as has also Klinger.

As all parts of the fly came in contact with the culture medium it is impossible to say that any one part was especially responsible for the conveyance of the bacilli. Firth and Horrocks were able to recover the bacillus from the head, wings, legs and body of the flies which had crawled over the typhoid cultures. The failure to isolate it from the excrement of the flies also agrees with the findings of Firth and Horrocks.

CONCLUSIONS.

1. The epidemic of typhoid fever in Chicago during July, August, September and October of 1902 was most severe in the Nineteenth Ward, which, with one-thirty-sixth of the city's population, had over one-seventh of all the deaths from this disease.

2. The concentration of the epidemic in this locality can not be explained by contamination of the drinking water, or of food, or on the ground of ignorance and poverty of the inhabitants, for the Nineteenth Ward does not differ in these respects from several other parts of the city.

3. An investigation of the sanitary conditions of this region shows that many of the street sewers are too small, and that only 48 per cent. of the houses have sanitary plumbing. Of the remaining 52 per cent. 7 per cent. have defective plumbing, 22 per cent. water closets with intermittent water supply, 11 per cent. have privies connected with the sewer but without water supply, and 12 per cent. have privies with no sewer connection.

4. The streets in which the sanitary arrangements are worst had the largest number of cases of typhoid fever during this epidemic, irrespective of the poverty of the inhabitants.

5. Flies caught in two undrained privies, on the fences of two yards, on the walls of two houses, and in the room of a typhoid patient were used to inoculate 18 tubes, and from 5 of these tubes the typhoid bacillus was isolated.

6. When the discharges from typhoid patients are left exposed in privies or yards, flies may be an important agent in the dissemination of the typhoid infection.

Results of Nephrectomy.—V. Carlier describes in *Echo Méd. du Nord*, vi., 49, the ultimate results in twelve cases treated by nephrectomy. The reflex irritation from the diseased kidney ceases with the extirpation of the organ, and it frequently happens that a patient afterward will tolerate drugs, mercury for instance, which caused serious disturbances before. The best results from the nephrectomy were attained in cases of renal tuberculosis derived from the blood. One of the patients contracted scarlet fever during convalescence, but the course of the intercurrent disease was normal, with no trace of albuminuria until the third week. In debating the question of intervention he is inclined to distrust patients whose urine contains an abnormal proportion of chlorids, either too little or an excess. A patient in the latter category died three months after a successful nephrectomy, from generalization of the tuberculous process.

PNEUMONIA: THE NEW "CAPTAIN OF THE MEN OF DEATH."

ITS INCREASING PREVALENCE AND THE NECESSITY OF METHODS FOR ITS RESTRICTION.*

ARTHUR R. REYNOLDS, M.D.

Commissioner of Health.

CHICAGO.

Figures are hard reading and harder hearing; but I must ask you to listen to a few in order that you may comprehend the magnitude of the pneumonia problem as I view it.

In the latest (1901) edition of his scholarly and most instructive "Principles and Practice of Medicine" Prof. William Osler, treating of pneumonia in the section of specific infectious diseases, says:

The most widespread and fatal of all acute infectious diseases, pneumonia, is now the "Captain of the Men of Death," to use the phrase applied by John Bunyan to consumption.

He then adds:

In the United States during the census year 1890 there died of it 76,496, a death rate per 100,000 of population of 186.94 [?]. In Chicago during the past ten years it has gradually replaced consumption as the principal cause of death, which A. R. Reynolds attributes to the predisposing influence of *Influenza*. In the last decade the death rate from pneumonia in Chicago was 18.03 per 10,000 of population, against 12.36 per 10,000 in the previous decade. There has been a marked increase in the disease in Baltimore, and Folsom has brought forward evidence to show that there has been a progressive increase in the death rate from pneumonia in the state of Massachusetts. The admission of pneumonia cases to hospitals during the past few years has, in some places, almost doubled.

These passages are cited for two purposes: First, that I may put their reader on his guard against the assumption that the great increase in pneumonia during the last ten or a dozen years is attributed by me solely "to the predisposing influence of *influenza*." Second, that I may emphasize more fully than Professor Osler has done the extent of this increase, both in point of time and of proportion.

As to the first, it will probably be sufficient to call attention to the title of the paper on which the assumption was based. This paper appeared in the March, 1901, Bulletin of the Chicago Health Department, and was entitled "Influenza as a Factor of Recent Mortality"—not the only, but one factor. That influenza has been such a factor and a very important one since December, 1889, is now admitted by etiologists generally. That the increase of pneumonia mortality is due solely to its predisposing influence is disproved by the following figures of deaths from all causes, those from consumption and those from pneumonia during the last thirty years:

In 1880 the death rate from all causes was 14.59 per thousand of the total population of the country; in 1900 it was 13.67—a decrease of 6.3 per cent. in the general mortality rate during the twenty years.

The consumption death rate in 1880 was 18.21 per 10,000 of population and 12.46 per cent. of the total mortality; in 1900 these figures were 14.44 and 10.56 respectively—decreases of 20.7 per cent. in proportion to population and of 15.2 per cent. in proportion to total mortality.

* Read by invitation at the Sixth General Conference of Health Officials in Michigan, under the Auspices of the Michigan State Board of Health, Jan. 15, 1903, at Ann Arbor, Mich.

EDITORIAL NOTE.—See Editorial, "The Deadly Pneumococcus," in THE JOURNAL A. M. A., April 14, 1900, probably the first printed notice of the increasing importance of pneumonia as a factor in the mortality of recent years.

On the other hand, while the pneumonia death rate had decreased 3.26 per cent. in proportion to population it had increased 5.57 per cent. of total mortality between 1880 and 1890, and 11.0 per cent. in proportion to population and 12.21 per cent. of total mortality between 1890 and 1900. The increase began long before there was any influenza in the country.

These computations are made from the data in the summary of vital statistics in the Twelfth Federal Census—that for the census year 1900—and are for the whole United States. Similar computations for Chicago, and covering two additional decades, show more strikingly the great decrease in the general death rate and in the consumption rate, and the much greater increase in the pneumonia rate.

Based on the U. S. census figures of population for each year the following are the death rates per thousand population: In 1860, 20.73; in 1870, 23.88; in 1880, 20.79; in 1890, 19.87; in 1900, 14.68—a decrease of 29.1 per cent., or nearly one-third in the 1900 death rate from the 1860 rate.

The deaths from consumption per 10,000 of population were, in 1860, 25.28; in 1870, 17.68; in 1880, 16.95; in 1890, 17.93, and in 1900 they were 15.30—an aggregate decrease of 39.5 per cent. in the forty years.

From pneumonia the deaths per 10,000 of population in 1860 were 4.40; in 1870, 10.24; in 1880, 12.58; in 1890, 18.84; in 1900, 19.78—an aggregate increase of 349.6 per cent. of pneumonia as compared with an aggregate decrease of 39.5 per cent. of consumption.

Note that the increase of pneumonia between 1880 and 1890—when there had been no influenza in the country, except sporadic cases, for seventeen years, or since the epidemic of 1873—was 49.7 per cent., or from 12.58 in 1880 to 18.84 in 1890; while the increase between 1890 and 1900—the influenza decade—was less than 5 per cent. (4.9) or from 18.84 in 1890 to 19.78 in 1900. It is obvious that influenza, while it undoubtedly has been a potent factor in increasing the mortality rate from other diseases—such as those of the heart, kidneys and respiratory system—is not the sole, nor even the principal, cause of any recent increase of pneumonia.

Since the census year 1900 pneumonia has claimed more than one-eighth of all the victims of the Grisly Reaper in Chicago, one-third more than consumption and 44 per cent. more than all the other contagious and infectious diseases combined, including diphtheria, erysipelas, influenza, measles, puerperal fever, scarlet fever, smallpox, typhoid fever and whooping cough—the total of which deaths was 4,489, as compared with a total of 6,560 deaths from pneumonia.

WHAT MAY BE DONE TO CHECK THIS INCREASING PREPONDERANCE OF PNEUMONIA MORTALITY?

As chairman of the Section on Hygiene and Sanitary Science at the Fifty-third Annual Meeting (1902) of the American Medical Association, I made a special effort to secure attention to this problem, and among those who contributed papers on the subject were Dr. Edward F. Wells¹ of Chicago, who wrote on the fatality and increasing prevalence of pneumonia, with suggestions for individual and communal prophylaxis, and Dr. James J. Walsh² of New York City, on its incidence, mortality and prophylaxis. The paper read in the same section by Dr. Smith Ely Jelliffe of New York City, on "Influenza and the Nervous System," belongs with these papers—the

advice therein given as to the prevention of this disease apply equally well to pneumonia. Dr. N. S. Davis,³ Jr., of Chicago, also read a paper during the year, before the Illinois State Medical Society, on the treatment of pneumonia, in which was embodied some sound advice on prophylaxis.

From these papers I quote the following: Dr. Wells advises that for individual prophylaxis in a case of pneumonia the nasal, pharyngeal and oral cavities should be kept as free as possible from accumulations of mucus, and when it has been demonstrated that such secretions contain the pneumococcus such efforts should be especially well directed and maintained. In addition, care should be taken not to become chilled when overtired. The individual should, so far as practicable, keep out of the range of extruded pneumococcus-laden secretions of infected individuals. The sputum and other secretions of respiratory surfaces of pneumonic patients, or of other infected individuals, should be destroyed before they have been allowed to become dry. Such persons should cough and sneeze into a moistened cloth. He adds:

There may be some comparatively simple means by which pneumonia may be prevented, but the fundamental information on which prophylactic rules may be formulated is not yet at hand; therefore, it should be the province and duty of public health officers to seek assiduously for such knowledge, and I would suggest that, as a preliminary step in this direction, pneumonia be placed on the list of notifiable diseases and that the environment of pneumonia patients be carefully noted and the results analyzed.

Dr. Walsh, after pointing out the contagious character of the disease, dwells on dust as a contagion carrier and urges the prophylaxis of clean streets, points out the danger of infection in crowded assemblies, and of defective house drainage and gas leakage as contributing causes. Specifically, as to preventive measures, he says:

It would seem important, then, first of all to insure precaution against the spread of the disease by teaching the general public that there is always an element of contagion danger in a pneumonia case, and that certain protective and prophylactic measures are at least eminently advisable in order to avoid all danger. The secretions of pneumonia patients should be thoroughly sterilized by heat, or should be subjected to strong chemical antiseptics. The expectoration of pneumonia reeks with bacilli. It is often received into napkins or handkerchiefs, and must not be allowed to dry and find its way into the air, but must be carefully disposed of by those in attendance on the patient. Practically the same precautions as are now invariably [?] instituted with regard to tuberculosis should be suggested for pneumonia.

Such directions will doubtless seem exaggeration of caution, not only to the general public, but to most medical men. Let us remember that the profession generally would have been quite as opposed to the suggestion of these precautions with regard to pulmonary tuberculosis twenty-five years ago. Now every one realizes that the old position in the matter was a serious mistake and founded on an erroneous opinion tenaciously held. The same thing may prove to be true of pneumonia.

Under the head of prophylaxis Dr. Davis says that:

Never have physicians known so much of the nature of pneumonia or used remedial agents more intelligently than now. It is not their fault that the mortality of this disease is increasing. But is the medical profession altogether free from blame for its prevalence? Prophylactic measures have not been enforced as they should have been. It is well known that the cause of pneumonia is a micro-organism in the sputa of those suffering from the disease, and that the malady

1. THE JOURNAL A. M. A. Nov. 15, 1902, p. 1231.

2. Ibid., p. 1235.

3. Ibid., July 5, 1902, p. 1.

is engendered by inhaling it. Therefore, the same care should be taken to collect and destroy the sputa that is taken in pulmonary tuberculosis. It is not, however, a sufficient precaution to exercise this care during a patient's brief sickness, because the diplococcus of pneumonia is known sometimes to live and multiply for months and even years in the mouth, pharynx and nose of those who have had the disease. Therefore, during convalescence, and for at least two or three weeks thereafter, expectoration, if it occurs, should be into a sputa cup containing an antiseptic and water. Moreover, the patient's mouth should be rinsed several times daily with an antiseptic mouth wash. During the illness the greatest pains should be taken to prevent soiling bed clothing, carpets or furniture with the sputa. After the illness the patient's room should be thoroughly cleansed and ventilated. The enforcement of such measures will help to lessen the spread of this disease and will greatly lessen the frequency of its recurrence in those who have had it.

The facts that house epidemics are not infrequent and that the disease prevails, as other contagious and highly infectious ones do, in the winter season, when people are most crowded together and live much of the time in badly-ventilated apartments, suggests another prophylactic measure, which the public should be taught to apply, namely, thorough ventilation of houses, offices, factories, theaters, churches, cars and other public places, in order that the air which must be breathed may be kept clean and free from infectious matter.

Laymen should be taught not to be afraid of a patient who has pneumonia, influenza or tuberculosis, but to be afraid of lack of cleanliness about him during his illness, of failure to enforce prophylactic measures and of close, badly ventilated apartments during the season when these diseases prevail.

Although experiments with pneumonia serum have shown that a temporary immunity can be created in certain lower animals, it can not be in man. These experimental successes, however, lead us to hope for more certain means of preventing pneumonia than we now possess.

To these suggestions I would add that every precaution employed in a case of diphtheria should be enforced in a pneumonia case. The two diseases are much more similar from the prophylactic standpoint than are tuberculosis and pneumonia. The former are both acute; therefore, preventive measures are not necessary for so long a period as to become burdensome and perfunctory.

The organism which causes pneumonia may live in the tissues and air passages of human beings for a considerable time without producing the disease. Every person here present has doubtless had the germ in his tissues scores of times, and at this very moment it is in the bronchial tubes of many of us. But before pneumonia can develop in such persons some change must take place, either in the organism or in the individual. At present those of us who are acting as hosts to the germ of pneumonia do not get the disease because there is something in us that, for the time being, renders us immune. That something is to be found in every human body in normal health and vigor. The moment the vitality becomes lowered sufficiently from any of the many causes to which we are liable to become subject—and no one can measure the exact time or place—then the pneumonia organism begins to multiply, to feed on our substances and to give off a poison, and the result is pneumonia.

It may come to pass that a simple, direct method of preventing pneumonia will be discovered, but until that is done our efforts must be directed toward keeping our bodies in condition to resist and challenge the invasion of pneumonia. Whatever measures are taken to this end will apply with similar force to all other infectious diseases.

The element first in importance in keeping the health up to standard is pure air. Without air no one of us

can live an hour, while we may live days without water and weeks without food. An important element in the increasing prevalence of pneumonia is, doubtless, the fact that more persons are spending their lives indoors than formerly—in shops, factories and offices. Sufficient air is only obtained by living as much as possible, both day and night, in the open air.

The air in dwellings, offices, factories and shops must be kept as pure within as without. If architects and builders can not secure proper air within buildings then we must to a greater extent in the future do away with buildings altogether.

Next in importance to pure air in dwellings is the necessity for sunlight. No room is fit to sleep in all night that has not been flooded with sunlight all day long. Human beings need the sun and the beneficial effect it has on the air they breathe quite as much as the vegetable kingdom needs it. The fashion of shades and shutters on windows will be abandoned as the beneficial effects of sunlight are understood.

Less need be said of the necessity for pure water and its constant use, both within the body and on its surface, for the world is now becoming awake to this fact.

With reference to food, no general rules can be laid down for all; but it is safe to say that the average adult person in the United States, who lives chiefly indoors, eats very much more than he requires to nourish his body; the extra amount is a burden on digestive power, clogs excretory organs and accounts for most of the malaise, headache and premature breaking down.

While pneumonia may be induced by the bad air, bad heating and bad lighting of dwellings, a more fruitful source of the disease is probably found in places of public assembly, such as schools, theaters, churches, street cars, etc. Greater attention must be paid in the future to the cleansing not only of the floors of such places, but of the air. What the American people seem to need is not more and better food, but more and better air. Overwork, overindulgence, excesses, all lower the vitality and render one a fit subject for pneumonia.

As to Dr. Davis' language concerning a pneumonia preventive serum, it may be remarked that it is barely ten years since the diphtheria antitoxin for both the prevention and the treatment of diphtheria was produced; that the anti-cholera and bubonic plague inoculations are of still more recent date; and that the scarlet-fever and whooping-cough sera are not yet two years old. Let us partake of the optimism of the apostle of bloodless surgery, Dr. Adolph Lorenz, who, in speaking of the probability of a successful serum treatment of cancer, recently said in his doctorate address⁴ at the Northwestern University:

If cancer is of parasitic origin, as one must hope, and as many of the most respected surgeons believe, then it may be possible that a curing antitoxin will be found. The prophecy of the great Joseph Lister, spoken as he gave his fellow beings antiseptics, will be appropriate for the second time: "Surgery will be quite different from what it has been heretofore."

If this boon should come to mankind, then general surgery also will give way to a very little sharp but harmless instrument—the hypodermatic syringe.

May the twentieth century give to the world, burdened with pain and death, this savior of mankind. The nation which gives birth to this genius will become the first nation of the world through this one deed.

It is not too much to hope that there is some one here present who may shortly give to the world the still more important boon of an antitoxin for pneumonia.

4. THE JOURNAL A. M. A., Jan. 10, 1903, p. 98.

Meantime, it remains for each of us—physician and sanitarian, curer and preventer alike—each in his appointed place, to do what in him lies to restrict the ravages of this, the most murderous modern scourge of civilized peoples. Let the physician instruct his pneumonia families as to the methods of saving other members of the household from falling victims. Let the sanitarian and the health officer push the propaganda of healthful living, the conservation and development of such inherited powers of vital resistance as the individual may possess—that vital resistance which is, after all, the best prophylactic against, not consumption only, nor pneumonia only, but against all the preventable diseases.

The work is not spectacular nor dramatic. It will have no such picturesque phrase as the "Great White Plague" with which to conjure and arouse sentiment and enthusiasm. There will be no imperial monarch to make it a fashionable fad by becoming the president of an anti-pneumonia league, nor will there be any royal palace set aside as a sanatorium for the treatment of pneumonia.

But in the end the persistent public educational work that shall restrict pneumonia will in like measure restrict all other diseases and so add to the span of human life.

ADDENDUM.

Note.—Since this paper was read before the conference the figures and computations have been revised to conform with the data of Table 1, Census Reports, Volume iv., Part 2, Twelfth Census of the United States. The original figures were taken from the Tenth and Eleventh Census Reports for 1880 and 1890 respectively, and the computations were made on those figures. Sundry discrepancies, noted in reading the paper, led to a comparison of the figures in the three several census reports, by which it was revealed that not only the figures of population but those of total deaths differ in the different reports.

For example: The population of the country in 1880 is given as 50,189,209 in the tenth census, and in 1890 as 63,069,756 in the eleventh census. In Table 1 of the twelfth census—above referred to—these figures are changed to 50,155,783 and 62,947,714 respectively. The total deaths are given as 756,893 for 1880 in the tenth census and as 732,017 in Table 1 of the twelfth census. Similar figures for 1890 are changed from 875,521 in the eleventh census to 841,419 in the twelfth census, Table 1.

The annual death rates per thousand of population, the ratio between these and the death rates from consumption and from pneumonia and the percentages of increase and decrease are, of course, affected by these changes. Not, however, unfavorably to the thesis of the paper—to-wit, that while the general death rate and the death rate from consumption have materially decreased during the last thirty years, the death rate from pneumonia had enormously increased during the same period.

Since the twelfth census is the latest and, presumably, the least inaccurate as to its statistical data, it has been thought well to revise the figures and computations in accordance therewith—the more so as the deduction of 24,876 deaths from the original 1880 figures and of 34,102 from the 1890 figures inspire the hope that in some future census the arbitrary addition of upward of 1,900 deaths to the actual number reported and recorded in the city of Chicago during the census year 1900, may also be deducted and the true death rate of the city for that period—15.08 per 1,000, instead of the erroneous census rate, 16.2—may be given.

Hope.—If we mingle with our hopes even a small modicum of judgment as to inevitable cause and effect, and if we also put forth an earnest effort to work for their realization, we can never be too hopeful. With this condition hope becomes a virtue to be cultivated, as well as a pleasure to be enjoyed. It is a wholesome tonic, a delicious draught. It not only cheers and consoles and encourages us by the way, but it gives strength to win the victory, or, if need be, to endure the defeat.—*Co-operation.*

Good for the State Board.—A new and most commendable step has been taken by the Ohio State Board of Medical Registration and Examination. Up to the present time the board, although having full discretion to revoke a physician's license to practice for such cause as immoral conduct, criminal offense or the abuse of intoxicants, has not exercised such discretion in criminal cases in which a conviction had not been obtained in court. In a recent instance in Columbus the board, very wisely it seems to us, after a full hearing voted to revoke the licenses of two physicians charged with attempting to produce a criminal abortion, and with being responsible for the subsequent death of the patient. [See *THE JOURNAL*, October 25, p. 1062, and November 22, p. 1329.] In these cases conviction in court is usually all but impossible, and very commonly the culprits escape with an acquittal or with no trial at all. Such seemed to be the probable termination of the case against the two men in Columbus, when the state board decided to take up the matter. Much genuine testimony was of course admitted that would have been ruled out of a court by those technicalities that so often are a shield for the guilty. In this case the young woman thought she was pregnant and charged a medical student with being the cause of her difficulty. The student enlisted the assistance of two physicians, who attempted to produce an abortion. As a matter of fact, as proved by the autopsy, the girl was not pregnant, but in their efforts the abortionists tore a hole through the uterine fundus, and then in trying to wash out the uterine cavity they injected a quart of water into the peritoneum. Death promptly resulted from general peritonitis. The testimony as to these facts appealed to the board as being conclusive, and the two physicians were stripped of their right to practice medicine. Every physician should applaud this action of the board and should at once extend to the board promise of every possible support in the admirable position that it has taken in this matter. No action more likely to deter men from performing criminal abortion could be suggested. Once it is known that the board intends to revoke the licenses of abortionists without waiting for the courts to find them guilty, the recreant physician who contemplates this crime will hesitate. From the clutches of the law he might escape on the slim technical rules of evidence, but this will not avail to preserve his certificate. Once his license has been revoked his only recourse will be to go into court as plaintiff against the board and prove himself innocent. This will be a much more difficult task than that of escaping the penalty of the law. Every physician should let the board know that its position is approved and will be sustained.—*Cleveland Med. Jour.*

Ignoring the New Until the Quacks Force it on Our Attention.—An eminently sound and conscientious practitioner tried in vain for 20 years or more to arouse the profession to a sense of the value of massage and mechanical therapeutics in the treatment of certain diseases. At last he gave up in despair. It was not just then fashionable. Editors would not accept his articles, and the lazy-minded, the exploiters of the popular opinion, beguiled themselves with the old-fashioned sneer at the "hobbies of hobby riders" and the world went on in its blind way. Then came the osteopaths and the biceps-worshippers of the cheap magazines, and what the profession would not listen to from its own members was, willy nilly, forced on the attention by the quack. It is true that other regulars and scientists prior to the quack knew all and far more than he of the value of massage, but, like so much other knowledge, it was not realized in daily practice by the leaders and by the masses of the profession. It required the compulsion of ignorant popular enthusiasm to make us actually treat our patients by these methods and to put into use the partial veritable truth turned into an untruth by the extremism and indiscrimination of the charlatan. But why need we carry out, generation after generation, this stupid belittling and ignoring of the new truth? There are many such illustrations as the one we have cited, of our strange indifference to methods of treatment, 10, 20 or 30 years after demonstration has been made of their efficacy and value. Let us keep our minds open and flexible!—*Amer. Med.*

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PROTEID METABOLISM.

At the present time physiologic chemists are looking for the greatest advance in knowledge of intracellular metabolism to come from the many recent observations on the intracellular ferments. As has already been noted in these columns, the fundamental observations on proteid splitting enzymes in the tissue cells were made by Salkowski and his pupils, who showed that tissues of all kinds are able to digest themselves when kept at incubator temperature for a time, in the absence of bacteria. This process of autolysis is due to the presence, within the cells, of an enzyme which is very similar to the trypsin of pancreatic juice, although not identical, as is shown by careful study of the products of the digestion.

A most important advance seems to have been made recently by Martin Jacoby,¹ who has obtained evidence that the ferments that accomplish autolysis are to a certain extent specific, that is, extracts of one organ will not digest the tissues of a different organ. The importance of this observation lies in its agreement with the more modern ideas of proteid metabolism, which hereby receive much support. There seems to be good evidence that fats and carbohydrates are taken into cells in a diffusible form, and are then built into the less labile constituents of the cell, undergoing again splitting before they are either used or transported to other cells. For example, sugar is synthesized into glycogen, and then broken into sugar molecules; fat is synthesized in the cell from the alcohol and fatty acid that compose it, but is again split into these components before it can be further used or carried away. But the proteids present a much more complex problem, since they are of many kinds, seemingly different in each cell or tissue, and since their splitting products are many and far more complex than those from fats and carbohydrates. Jacoby considers that since the proteolytic enzymes of the cells will split only the proteids of the same kinds of cells, it is strongly suggestive that likewise when their action is reversed they will build up only the specific substances of the cells from the heterogeneous materials brought to them from the blood.

This theory needed evidence that the body cells can build up non-proteid products of proteid digestion into tissue proteids, and a paper furnishing this evidence has appeared almost synchronously with Jacoby's article. It

is a pretty well-known fact that the soluble albumoses and peptones are not absorbed as such from the intestinal tract, and the teaching has been that they are in some mysterious manner transformed during their passage through the intestinal wall, since they are not found in the blood coming from the intestines, at least not in any amount comparable to the quantity absorbed. It was generally supposed that the diffusible digested proteids were converted into the proteids of the serum, to be used later in the cells in some unknown way. Not long ago Cohnheim showed that the intestinal epithelium contains and secretes an active enzyme, *erepsin*, that has the property of splitting albumoses and peptones into the simpler, non-proteid bodies, although quite unable to attack undigested proteids. This made it seem very probable that the albumoses and peptones do not appear in the blood coming from the intestines because they are further split by the erepsin. In other words, the formation of albumoses (or better, proteoses) and peptones is not the chief purpose of proteid digestion, but these bodies appear merely as intermediary products. If this is true then the cells of the body must be able to form these ultimate splitting products into the proper tissue proteids.

O. Löwi² took up this question and found the hypothesis correct, according to the results of his experiments. He permitted pancreas to digest itself until no reaction for proteid could be obtained, and then substituted it for proteid in the diet of a dog that was in nitrogenous equilibrium. It was found that it took the place of the proteid completely, for nitrogenous equilibrium was maintained, and therefore the simpler nitrogenous bodies must have been synthesized by the body cells to repair the continuous loss of cell proteid.

While these experiments are few in number and awaiting confirmation, they agree so completely with theoretical expectations that they are of the highest significance. Surely the demonstration of synthesis of the proteid molecule from simpler bodies, most of which are well known both as to properties and structure, lets much light into one of the deepest biologic mysteries.

THE SIGNIFICANCE OF ALBUMINURIA.

At the last meeting (Jan. 19, 1903) of the New York State Medical Association, New York County Branch, there was an interesting discussion of the significance of albumin in the urine, which was opened by the medical director of one of the large life insurance companies. As life insurance examiners have more extensive opportunities and especially opportunity for more prolonged observation in this subject than practitioners generally and as their judgment in the matter is responsible to the financial department of the company, their conclusions and suggestions can scarcely fail to be of practical value. Dr. Edward Lambert considers that for length of life the habits of the individual, his customs, especially with regard to highly spiced food, al-

1. Beiträge zur Chem. Physiol. u. Patbol., 1903, iii, 446.

2. Centralblatt für Physiol., 1902, xv, 590.

cohol and tobacco, and the intensity of his application to business, with the time given to sleep, are factors of much more significance than the presence of a small amount of albumin. Very few young men pass a whole year without the occasional appearance of albumin in the urine, the result of overexercise, or of extremes of heat and cold. If this passes away in a short time it has no special prognostic significance, even though it may be accompanied by a few casts. But if it continues to be present the irritative conditions to which it is due may eventually cause, if it has not already, true kidney degeneration.

The amount of danger in any case is not proportionate to the amount of albumin in the urine. Dr. Lambert recalled a case in which so slight a trace of albumin was present that it could be detected with assurance only in a favorable light after careful filtration of the urine. It was decided that so slight an albuminuria could only be physiologic. Accordingly a policy was issued which matured by death within two years, though the business partner of this same applicant, who was at the same time absolutely refused because of the presence of a notable quantity of albumin, survived for more than twenty years. In one case albumin could be detected only in the afternoon urine. It was never seen in the morning urine, so that the family practitioner insisted on the absence of any significance. The patient died of chronic nephritis, however, within five years.

Osler,¹ in a recent article, referred to a number of patients who, in his experience, had lived for many years after their rejection by insurance companies because of albuminuria. Such selected cases represent actually, however, only a very small proportion of the whole number of the rejected. The presence of albumin always means that something is wrong. With care patients may live for many years, despite its presence, but no better stimulant to the adoption of a more healthful mode of life could be given them than refusal by an insurance company. Many a man owes prolonged life to this circumstance, and family practitioners should realize this influence for good and take advantage of it, rather than lessen its force by protestation against it, as is so frequently the case.

Dr. S. O. Vanderpoel, in discussing Dr. Lambert's paper, said that undoubtedly many applicants refused fifteen to twenty years ago by insurance companies because of the presence of albumin in the urine are still alive. A careful collation of the statistics of such cases, however, shows that from four to five times as many of these rejected applicants are dead as ought to be according to the normal expectation of life among men of their years. Albuminuric individuals very seldom live out more than one-half of their expectation of life, and if any serious illness intervenes it is almost sure to carry them off. Hence the necessity for the elimination of these cases from among the ordinary risks assumed.

The full significance, then, of albuminuria, even when accompanied by urinary casts, is not known as yet. We are almost entirely in the dark as to the meaning of nucleo-albumin, which would seem at times to be serious, since it has been found associated with eclampsia. It is to be hoped that careful investigations of such cases and observation of the conditions for many years will eventually give us the exact knowledge we now lack. There is no doubt of the importance of the subject, the field is most promising and the opportunity for good work of enduring character is open practically to every painstaking practitioner.

THE TREATMENT OF DUPUYTREN'S CONTRACTION.

The treatment of few, if any, of what may be termed minor surgical affections has been attended with such difficulties as that of Dupuytren's contraction. The clinical picture of this obstinate condition is sufficiently well known to all engaged in surgical dispensary practice. Gradually and without pain the fingers of one of the hands is drawn downward toward the palm, the contracture progressing gradually until several fingers, possibly the entire hand, is almost entirely useless. The ring finger of the right hand is generally first affected, and as the disease advances the little finger and middle finger are also affected. The thumb and index finger are seldom involved. All the structures of the flexor surface of the hand, muscles, tendon and skin have been considered possible factors in the production of this condition, but Dupuytren, after long observation and careful study of the tissues, was the first to show definitely that the seat of the disease is in the palmar aponeurosis, and this has been thoroughly established by repeated subsequent observers. Examination of tissues removed shows that the process is one of chronic hyperplastic inflammation with scar tissue contraction. As the process progresses not only the aponeurosis, but frequently also the skin, the ligaments and joints themselves are involved. The course of the disease is extremely chronic, from three to ten years being required before the contracture is complete.

The difficulties of treatment have been all the greater because so little is known as to its etiology. Injuries of the palmar fascia, particularly by those who use the tools of some trade continuously, rheumatic affections, general sclerosis and nervous origin have all been suggested as possible causes; however, constitutional treatment has proved of little avail in these cases. Malgaigne and some of the earlier surgeons, believing that the contracture was primary in the muscles, resorted to division of the tendons, thus producing a state of affairs worse than before. Sir Astley Cooper advised the more rational procedure of dissecting out the contracted tissue with temporary or permanent cure in some cases. Others have simply divided the contracted aponeurosis and skin and straightened the fingers forcibly, but this has been usually followed by recurrence. Electrolysis

1. "On the Advantages of a Trace of Albumin and a Few Tube Casts in the Urine of Certain Men Above Fifty Years of Age." N. Y. Med. Jour., Nov. 23, 1901.

and various forms of apparatus for extension have also been tried.

The latest suggestion as to treatment comes from the clinic of Von Bergmann of Berlin.¹ Lexer, one of Von Bergmann's assistants, has treated eight cases by removal of the entire aponeurosis and overlying skin and covering in the defect with a flap with a pedicle from the chest wall or by a flap taken from the thigh. The results in his cases, after two and a half years' observation, were very satisfactory except in two cases, in which there was keloid formation requiring a second operation. Many of the earlier methods of treatment have given fairly satisfactory results, and might perhaps be advised before resorting to such radical measures, but for recurrent and obstinate cases this procedure seems to be a reasonable and justifiable one.

IMAGINARY BRIGHT'S DISEASE PRODUCED BY QUACK ADVERTISEMENTS.

The following clipping is taken from a recent daily paper:

SUICIDE DUE TO CAUSELESS FEAR.

Andrew J. Teggin, an artist, whose pictures have been exhibited at the Academy of Design, took chloroform to-day and died soon afterward at the New York Hospital. Teggin's death was the end of five years' dread of Bright's disease. Though eminent specialists had assured him he had no symptoms of the disease, he persisted in believing that he was doomed to die from it, and this so worked on his mind that he killed himself rather than wait for the end he felt sure would come.

No statement of the case of the man's morbid psychology is mentioned, but the following passage published prominently in another portion of the same paper is highly suggestive:

TEST YOUR KIDNEYS.

Let some morning urine stand for twenty-four hours in a glass, or bottle. If then it is milky or cloudy or contains a reddish brick-dust sediment, or if particles or germs float about in it, your kidneys are diseased.

Could anything be more fiendishly deceptive? The fact that the "remedy" that this advertisement proclaims has been on the market for many years, and that, to our knowledge, this particular trap has been laid for some years, indicates that there must have been many victims. Imagine the horror that must fill the mind of the poor fellow who views a cloud of phosphates or bacteria, which can hardly fail to be present in the urine left in a "glass or bottle," as he appreciates that he is in the clutches of the dread Bright's disease; for does he not know that this is as surely fatal as is cancer or consumption. And if, because of winter's cold, no bacterial development occurs, and the urine remains clear, does he escape? Not if the advertiser knows it! For in that event there is provided the alternative of "a reddish brick-dust sediment" of uric acid coming down in the acid urine.

What must be the sum total of the secret worry, the growing fear, the startling terror at every mention of the death of some one from Bright's disease, among the many who have been deluded by this simple advice to

"test your kidneys." If we did not know the mental attitude of the charlatan, far more heartless than that of gambler, swindler or other criminal who defrauds by means that do not rest on the victim's very hope of life and health, we could not believe that he appreciated the results of his insidiously worded lures. But he does fully; every mail brings him letters full of the terror of the fatally ill, the hope of the dying, the last clutch at the straw, and all these are cheerfully turned to profit. Weir Mitchell, in "The Autobiography of a Quack," has accomplished the remarkable feat of depicting a character without one spark of humanity, without a quality that might give one hope of some hidden redeeming grace—and such a character must be necessary for the hero of such a tale.

DEATH OF DR. W. E. B. DAVIS.

As we go to press the sad news reaches us by telegram of the death from accident of Dr. W. E. B. Davis of Alabama. There could be hardly any death that would more shock the profession generally than his, cut off in his early prime with an enviable record behind him and every promise of greater usefulness and distinction in the future. There are few, if any, who had more than he the faculty of winning friendship and holding it; his personality was a most strikingly gracious one and of the very best type of southern gentleman. The official positions of honor, trust and responsibility to which he was called indicate the appreciation given to his abilities and personal qualities, both by his associates in his particular specialty and by his professional brethren generally. It is customary to say nothing but good of the dead, but in this case there are no mental reservations, nothing else could be said.

THE ITHACA TYPHOID EPIDEMIC.

With all our progress in hygiene and sanitation we have occasional examples of how things ought not to be in this particular line. According to the press reports such an instance is very strikingly given in the condition of Ithaca, N. Y., at the present time.¹ The case is the more notable in that the town is the seat of one of our largest universities where lack of information as to up-to-date sanitation can hardly be presumed to exist. The university, of course, does not have the town sanitation under its charge, but the town authorities can reasonably be assumed to have had ample chances of enlightenment on such matters. Where they seem to have been blameworthy is in not sufficiently guarding the sources of their water supply, which has apparently been proven to be the cause of the present outbreak of typhoid in the town. The alleged fact that the university itself is a large stockholder in the water company supplying the polluted water is also a serious indictment against its authorities; it is unfortunate—to say the least—if it has been even a passive agency in the spread of the disease. It is charged by the newspapers, moreover, that their negligence was not altogether passive; that the executive authorities of the institution were requested by the senior class that meas-

1. Janssen: Arch. f. klin. Chirurgie, 1902, vol. lxxvii.

1. THE JOURNAL, under New York News, Feb. 7, 14, 21 and 28.

ures should be taken to supply uninfected water and the request was refused. If these allegations are true the aspect of the case is more serious. We hope there is some mistake as to the facts. While the charges do not necessarily imply moral obliquity or intentional and deliberate recklessness as to human life, the alleged neglect and oversight is of the class of blunders that are, as Napoleon said, sometimes worse than crimes. It will be a lesson to authorities and trustees of institutions who fail to appreciate their responsibilities.

SUBSTITUTION AND ADULTERATION.

The recent utterances of the New York health commissioner showing the adulteration in the pharmaceutical retail drug trade, and still later remarks of the chemist of the Agricultural department to the New York Society of Medical Jurisprudence, alike indicate the existence of an evil that especially affects the medical practitioner.¹ If we can not depend on the dispenser for pure articles in our prescriptions the administration of medicine is a farce, and we had better go back to the old saddle bag or the more modern buggy case. If reputable drug stores, such as are many of the 300 from which the samples were obtained by the New York health commissioner, can not be relied on, the situation would seem to be discouraging. We can not lay everything to the retailers, however; they are themselves often victims and the matter needs further investigation. The foundation of a government drug laboratory, which would keep track of the standard preparations and check adulteration, would be a boon not only to the medical profession, but to its patrons. Of course, the manufacturers of the adulterated proprietary drugs make the most of it, but to a certain extent the high prices placed on their preparations which would otherwise be more readily available give them a certain responsibility for the evil. We hope the investigation will not be dropped until the evil practice is ended.

DICHOTOMY, OR THE DIVISION OF FEES.

It seems that the evil of commissions and division of fees is not confined to this country. They have it abroad, in Belgium, for example, where it has recently been brought before the Council of the College of Physicians, though they give it a name which seems a little pedantic. They call it dichotomy, perhaps with the idea of making it less likely to attract public attention. Here we are not so careful as we might be in this regard. Whatever scandal we have is made public from its beginning—to some extent to our disadvantage. The official decree promulgated by the Council is that a physician may not charge a commission of a surgeon to whom he sends a case and no surgeon may allow such a fee. The attending physician may only charge for his own work and his assistance that he has given in the surgical operation. Of course, this decree is favorably commented on by such foreign journals as have noticed it. They point out that a patient feeling himself the victim of a double charge will have less confidence, not only in his medical attendant, but in others in the transaction, and not only his attendant, but the

whole medical body will suffer in prestige. It would seem that this particular point might be made a little more prominent in our medico-ethical codes. It is interesting, however, to know that trouble with this problem is common on the other side of the Atlantic. There is a sort of sinful satisfaction in knowing that our countrymen are not the only sinners.

Medical News.

MARYLAND.

State Care of Insane.—In the recent annual report of the lunacy commissioner of Maryland state care of the insane is urged. "Already 5 or 6 counties send all their insane to the state institutions and many other counties care only for a few demented cases. The time is ripe for a radical change from county to state care. . . . Spring Grove and Springfield hospitals are models of their kind, the former adapted to the care of the more acute cases, the latter for chronic cases. It is to be regretted that Bayview, the city asylum, is not dispensed with. It is manifestly improper to attempt to care for the city paupers and the city insane under the same management. Either the city should maintain a separate asylum for its insane, apart from the almshouse, or what would be far better, acquiesce in the plan of state care. If the two state hospitals, Spring Grove and Springfield, were enlarged, the insane of the state could be cared for in a far better manner and really at lower cost than under the present system." Discussing the increase of alcoholism and the use of drugs as promoting insanity, the report continues: "Recent enactments by the legislature make it possible for such persons to be committed for a period, under the jurisdiction of our courts, and it would work great good if this provision of the law was oftener availed of. It is perfectly feasible to have at Springfield a colony of inebriates, committed for a definite period, who could be recommitted on the first offense after leaving the colony. An incalculable amount of good might be accomplished by this system."

Baltimore.

Personal.—Dr. William Howell, dean of the Johns Hopkins Medical School, was the guest of honor, February 21, at the annual banquet of the New England Alumni of the Johns Hopkins University, held at Boston.—Dr. I. H. Elderice broke his knee-cap in attempting to board a street car February 19.

Abortionist Convicted.—Dr. William B. Hawkins, who forfeited bail and was arrested in Philadelphia, was convicted in the criminal court February 19, of manslaughter, in causing the death of a young woman here in November, 1901, by criminal operation. The penalty ranges from nominal fine or imprisonment to ten years in the penitentiary. It was the second trial, the jury disagreeing at the first trial, last October. Motion for new trial was made.

Health Report.—There was a still further decrease in the number of cases of measles reported last week, the number being 86. With this decrease the death-rate between the whites and blacks assumed its normal proportion, about 1 to 2. Whether this is a mere coincidence is unknown. There were 34 deaths from pneumonia, 6 from measles and 11 from la grippe. One case of smallpox was reported in a sailor who is supposed to have contracted it down the bay.

Hobbies Help College.—The late Dr. William H. Crim had two hobbies, the Fifth Maryland Regiment, of which he was for many years surgeon, and his extensive and valuable collection of antiques. Many of these antiques are of interest on account of their association with royal personages or with distinguished citizens, as Washington, Lafayette, etc. His widow has just died and in her will she has made large rever-sionary bequests to the University of Maryland School of Medicine, for the establishment of a professorship and scholarships for poor young men studying medicine. The struggles which her husband made to acquire his professional education led her to think that she could not make a more worthy disposal of his property or more suitably perpetuate his memory, than by providing for similar cases. The amount which will be available is at present uncertain, as it depends on the result of the sale of the collection, which represents Dr. Crim's entire fortune, as he left no real estate nor life insurance. It will probably be taken to New York, where it will bring a

1. See THE JOURNAL, Feb. 21, 1903, p. 525.

large price, possibly \$100,000 to \$200,000. The will provides a trust by which four persons, relatives of Dr. and Mrs. Crim, are to receive the benefit of the estate during life, and on their death the whole estate, except \$25,000 which is specifically bequeathed, is to pass to the University. One of the specific bequests is \$5,000 to Dr. John G. Jay, Dr. Crim's physician.

NEW YORK.

Donation to Hospital.—Mrs. Charles D. Vail has given \$6,000 to the City Hospital, Geneva, to finish and furnish the wings now being erected.

Demand Registration of Nurses.—Several hundred physicians and citizens of Buffalo and Rochester have signed a petition favoring the bill demanding registration of trained nurses to be introduced at Albany this week. The bill is designed to shut out incompetent nurses and provides for extended training before registration.

To Render Immediate Aid.—The New York Central Railroad has perfected a hospital and medical system. Contracts have been made with hospitals and physicians in all cities and towns of any prominence along the line of the road. The new system has been adopted so that immediate medical service may be rendered in case of train wrecks or other accidents to employees or passengers.

The Ithaca Epidemic.—The State Commissioner of Health, Dr. Daniel Lewis, New York, visited Ithaca, February 24, to investigate the typhoid fever situation. He found that contaminated water was the specific cause of the epidemic, and expressed his belief that the epidemic was on the wane, as less than one hundred serious cases then existed in the city. He believed, also, that the highest mortality rate had been reached and that the mortality of the epidemic throughout had been relatively low.

Coroner's Office Recommendations.—A committee of the New York County Medical Association, consisting of Drs. Stephen Smith, E. Eliot Harris and Harry R. Purdy, presented to the association a report containing the following recommendations:

1. The duties of investigating sudden deaths should be transferred from the coroner to the health department.
2. The present legal duties of the coroner should be turned over to the district attorney's office.
3. The judicial duties of the inquest should go to the magistrate's court.
4. Duties, other than those pertaining to the inquiry into the cause of death and the inquest, should go to the city chamberlain.

The report was referred to the committee on legislation, with instructions to endeavor to secure the legislation necessary for carrying into effect the recommendations contained in this report.

Buffalo.

Personal.—Dr. Devillo W. Harrington and Dr. Charles McCarthy are spending a vacation in Mexico.—Dr. Charles Van Bergen, Buffalo, will spend the summer abroad.—Dr. Earl P. Lothrop has gone to Florida.—Dr. Edward J. Meyer is taking a southern trip.

January Mortality.—The monthly report of the department of health for January shows an annual death rate of 14.3 per 1,000. Among the principal causes of death are pulmonary consumption, 42; typhoid fever, 16; debility, 32; cancers, 21; apoplexy, 26; meningitis, 13; valvular heart disease, 20; pneumonia, 53; nephritis, 19, and violence, 17. The total deaths for January were 441, as compared with 381 in January, 1902.

Marine-Hospital Commission.—The commission appointed by the government to select a site for the proposed marine-hospital in Buffalo has arrived. It is composed of Surgeon Louis A. Williams, U. S. Marine-Hospital Service, and Mr. F. B. Wheaton, of the supervising architect's office. They are under orders from the Secretary of the Treasury and are to report to him at the conclusion of their investigations.—Congress appropriated \$125,000 for a marine hospital at Buffalo and the act provided that not more than \$25,000 should be spent on a site.

University Day.—University Day exercises were celebrated by the medical department of the University of Buffalo, February 23. The public exercises took place at the Star Theater, where Prof. Herbert L. Willett of the University of Chicago delivered the address. In the afternoon a reception was given to the senior and junior students and the faculty at the home of the dean of the medical department, Dr. Matthew D. Mann. In the evening a reception was tendered at the college building by the alumni association.

New York City.

Personal.—Dr. St. Clair McKelway, Brooklyn, a life member of the State Board of Regents, has resigned on account of failing health and numerous other demands on his time.

German Hospital Report.—The annual report of this hospital shows that in the year 1902, 3,247 patients were admitted, of whom 2,632 were non-paying. The average daily number of patients was 176.

Druggists Arrested.—According to the chemist of the health department, 40 out of 215 druggists were found to be selling Jamaica ginger and aromatic spirits of ammonia adulterated with wood alcohol. Some of these druggists have been arrested in consequence.

Grip and Pneumonia Prevalent.—According to the records of the health department there has been a rapid increase in the number of cases of influenza, though the disease is of a mild type. In the past three weeks the deaths from pneumonia were 155, 210 and 190 respectively.

Hospitals Under Financial Stress.—The serious financial situation that confronts the New York hospitals has led George MacCulloch Miller, president of the Saturday and Sunday Association, to make an urgent appeal for generous gifts in behalf of the 40 institutions in the association.

Disregard of Diphtheria Antitoxin.—Dr. J. H. Raymond of the health department complains of the unnecessarily high death rate from diphtheria in the Borough of Brooklyn, i. e., 18 per cent., and maintains that if diphtheria antitoxin were more promptly and generally employed, this death rate would not be over 7 per cent.

The Aronson Serum Tried.—The first trial in this city of the new serum for scarlet fever has been made by Dr. Louis Fischer. The serum used was that discovered by Dr. Hans Aronson of Berlin, and with which experiments have been made by Dr. Adolf Baginsky since last summer. Dr. Fischer reports that although his case of scarlet fever was severe a prompt amelioration of all the signs and symptoms followed the use of the serum.

Substitution Enjoined.—At a special term of the Supreme Court a final decree was entered in the case of Fairchild Brothers and Foster vs. John H. Everhardt et al., whereby the defendants are enjoined from dispensing any essence of pepsin or preparation not manufactured by the plaintiff, in imitation of, or in substitution for, Fairchild's essence of pepsin, whenever Fairchild's product is asked for. Damage to the amount of \$250 and costs of \$42.72 were assessed on the defendants.

PENNSYLVANIA.

Sewer Suit.—Martin G. Peifer and wife have sued the city of Lancaster for \$10,000 damages, alleging that owing to the flooding of a cellar by a sewer several cases of typhoid fever were caused in the family.

Smallpox Closes School.—The students of the Edinboro State Normal School, several hundred in number, have all left the institution and gone to their several homes because of the presence of smallpox in the town.

Hospital Room Endowed.—The Columbia Hospital, Columbia, has received from the widow and children of the late H. H. Houston of Philadelphia, a gift of \$5,000 for endowing a room to be called the "Houston Memorial Room."

Wholesale Vaccination.—The H. C. Frick Coke Company has issued an order that all of its employes and their families be vaccinated. It is said that fifty physicians have been engaged for the work and that \$10,000 worth of vaccine virus has been purchased for the vaccination of the 300,000 individuals affected by this order.

To Abolish Secret Remedies.—A bill has been introduced into the legislature providing that proprietary and patent medicines shall bear on the label a copy of the formula, including the several ingredients and the quantities of each. The bill provides, also, that none but a regular graduate of pharmacy properly registered under the laws of the state may prepare such medicine. Violation of the act renders one liable to a fine of \$1,000 and imprisonment for one year, or both, one half the fine to go to the informer.

Urge Stringent Regulations.—Dr. Hugh Hamilton, Harrisburg, on behalf of the Dauphin County Medical Society, has presented a memorial to the committee on judiciary general of the house of representatives, urging the passage of the "act to establish a medical council," which has been referred to in THE JOURNAL. They say, in part:

There is need for a general law requiring every one who claims to heal or treat the critically ill, the trusting sick or gullible ailing

public, to be examined by the medical council. Without such a law it would be a manifest wrong to permit the collection of money for incompetent work, whether the "tort" or fraud was intentional or not.

Sanatoria for Poor Consumptives.—A bill has been introduced into the legislature providing an appropriation of \$500,000 for the erection of two sanatoria for poor consumptives. The institutions are to be similar, one to be located in the Pocono Mountains, the other probably at Mont Alto. The institutions are to be so constructed as ultimately to accommodate at least 2,500 patients each. The state forestry reservations are to provide the sites. The governor is authorized to appoint a commission of five to be known as "The Pennsylvania State Tuberculosis Commission," and this commission is to select the sites, construct the buildings, and administer the institutions.

Philadelphia.

Alleged Physician Arrested.—F. D. Clark, who claims to be a physician, is held by the police awaiting the result of an illness said to be due to an illegal operation performed by him five days before on a young girl who was brought to the Jewish Hospital suffering from peritonitis.

University Day.—On the occasion of "University Day" celebration, February 21, by the University of Pennsylvania, Dr. S. Weir Mitchell delivered an address on "George Washington in His Letters." Brigadier-General Leonard Wood, M.D., U. S. Army, was one of five to receive the honorary degree of doctor of laws.

Medical Appointments in National Guard.—Among new appointments made by the governor are those of Dr. Robert G. LeConte as surgeon-general to succeed Dr. John V. Shoemaker; Dr. George M. Coates, surgeon of the Second Regiment, with the rank of major, and Dr. Ross H. Skillern, assistant surgeon, with the rank of first lieutenant and assigned to the same regiment.

Typhoid, Smallpox and Deaths.—The epidemic of typhoid fever is gradually abating. Smallpox continues to prevail to an extent to cause uneasiness among the health officials. During the week ended February 21, 25 new cases of smallpox were reported and 6 deaths from the disease. During the same week there were 582 deaths from all causes. The extreme cold weather is considered partially accountable for the increased death rate.

A Deserved Honor.—Dr. Simon Flexner, professor of pathology at the University of Pennsylvania, has been chosen as chief of staff of the Rockefeller Institute for Medical Research, to be located in New York. Dr. Flexner gained especial distinction by his work on "The Etiology of Dysentery" and "Snake Venoms." He was a member of the commission sent to the Philippines by the Johns Hopkins University to study diseases peculiar to those islands.

Contract for Hospital Awarded.—The contract for building the new Municipal Hospital has recently been awarded at \$143,210. It is to be built on the new site in the Thirty-third Ward, and is to be completed in 190 working days. The structure is to be a colonial building, 200 feet in length by 150 feet in depth. For smallpox patients there will be two large wards, each 150 by 35 feet; several smaller wards will be constructed for patients with other contagious diseases. An ordinance is pending to sell the present Municipal Hospital and grounds.

GENERAL.

Manila Cholera Report.—Manila is free from cholera, and Santiago Cholera Hospital has been abandoned. If any cholera sufferers are found in Manila in the future they will be cared for at San Lazaro Hospital. Santiago Cholera Hospital was opened March 27, 1902, and up to Jan. 1, 1903, cared for 1,268 cases of cholera. The average mortality was 65.28 per cent. The Americans cared for numbered 146, the mortality among them being 32.87 per cent. Dr. Lindley, who has been in charge, has done very faithful and efficient work.

Whiting Still at Large.—Despite the notices which have already appeared in THE JOURNAL warning the medical public against F. Whiting, who represents himself as an accredited agent of the American Medical Association, and of THE JOURNAL, he is still at large and pursuing his fraudulent way through the East. During the last week we have received advices that this individual has been operating in Greene, N. Y., and Bath, Pa. The police authorities of Reading are on his track, and any information sent to the Chief of Police, Reading, Pa., or to THE JOURNAL will be appreciated.

CANADA.

Proposed Infirmary for Victoria, B. C.—A meeting was held recently in Victoria by those interested in establishing an infirmary in that city, in connection with the isolation hospital.

Typhoid Outbreak Among Nurses.—Five nurses of the Royal Victoria Hospital, Montreal, are convalescing from typhoid fever. Five years ago there was a similar epidemic. The authorities have found nothing at fault in the sanitary arrangements of the hospital.

McGill Graduates in British Columbia.—At the annual meeting of the British Columbia graduates of McGill University, held February 14, Dr. D. H. Harrison, the oldest graduate in that province (1864), was elected to the presidency. It was decided to continue the \$50 prize to the best B. C. matriculant each year to McGill, and \$25 to the second best. Dr. McGregor, Vancouver, founder of the society, was re-elected secretary; Dr. Tunstall, Vancouver, treasurer, and Dr. G. H. Manchester, New Westminster, one of the vice-presidents.

A Hygienic Institute for the Western University, London.—A deputation, headed by Dr. Robert Ferguson and Dr. H. A. McCallum of London, Ontario, recently waited on the Ontario Cabinet at Toronto, presenting a request that an institute of hygiene be established in London in connection with the Western University. The government has replied that they can not at present accede to their application. The object of the university is to have the government build and maintain an institute equipped with laboratories for the purpose of providing scientific facilities for the prevention and treatment of infectious and epidemic diseases. The petitioners assert that something is due the western section of the province in view of the assistance granted Toronto and Queen's universities; they will prosecute their application at a future date.

Montreal General Hospital Report.—During 1902, 2,878 indoor patients were treated in the wards of the Montreal General Hospital, 55 more than for the previous year. In the outdoor departments there were 31,993 consultations. Of the total number of indoor patients, 166 remained over from the previous year; 2,894 were admitted during the twelve months, and 184 remained in the hospital at the end of the year. There were discharged from the hospital 2,652, and there died in the hospital 226. Of this number 88 died within three days of their admission. The death rate was 7.85, or 4.8 if the 88 were deducted. The total income amounted to \$87,439, and the expenditure was \$99,967, an excess of expenditure over income of \$12,528. The average cost of patients per day was \$1.49. At the annual meeting Dr. F. G. Finley was re-elected secretary for 1903.

Montreal Death Rate in 1902.—A striking feature in the death rate in Montreal during 1902 was the decrease of 700 over 1901. This has been, in most part, put down to the fact of the unusual cool summer of last year affecting the infant mortality to a very great degree, but also in part to the general improvement in the health of the city. By months the deaths were as follows: January, 481; February, 426; March, 534; April, 583; May, 547; June, 466; July, 735; August, 587; September, 440; October, 412; November, 484; December, 576. The total number of deaths was 6,271, as compared with 6,915 for 1901. Ten died from smallpox; 76 from measles; 64 from scarlet fever; 57 from diphtheria; 19 from croup; 28 from whooping cough; 26 from influenza; 86 from typhoid fever; 347 from diarrhea; 105 from cholera infantum; 664 from consumption, and 544 from pneumonia. Of 100 cities of America from which statistics could be secured, Hamilton, Ont., had the lowest death rate and Three Rivers, Que., the highest.

FOREIGN.

Tuberculosis Exposition at Odessa.—Russia has been holding an extensive exposition on all matters relating to tuberculosis.

Million to Hospitals.—The lay press reports the Savings Bank of Milan, Italy, as having given \$1,000,000 to the hospitals of Lombardy to enable them to introduce the latest discoveries of science.

Dismissal of Suit for Damages Against Medical Journal.—Professor Lewin of Berlin, the author of an article on Antimorphin, denouncing it as containing morphin, and the two editors of the *Deutsche Med. Wochenschrift*, in which it appeared, were sued for damages by the manufacturer. The

suit was dismissed by the court and the costs assigned to the plaintiff.

Efforts by the Profession to Obtain Public Health Legislation.—According to the *Klin.-Therap. Woch.*, the medical chambers of Austrian Tyrol threaten that their members will go on a strike (*in den strike zu treten drohen*) if the members of the legislature do not abandon their obstruction of the measure in regard to matters affecting the public health. The measure was first brought up in 1900.

Parasite to Exterminate Mosquito.—It is announced by cable from Berlin that Dr. Dempwolff, who succeeded Professor Koch as the head of the German anti-malaria expedition to New Guinea, announces that he has discovered an aquatic insect which destroys the anopheles mosquito, and that he proposes to cultivate the creature artificially in the hope of exterminating the mosquito, thereby exterminating malaria.

Does Gypsum Dust Cure Tuberculosis?—The medical faculty of Berlin have been informed that there is no case of tuberculosis among the members of the Berlin Plaster-of-Paris Workers' Union, in spite of the fact that many were tuberculous when they entered the trade. Similar observations from other sources concerning workers in this material make a foundation for an investigation, and there is, therefore, issued an appeal for evidence and investigation.

Bier Called to Bonn.—Dr. A. Bier, professor of surgery at Greifswald, has accepted a call to Bonn as successor to the late Professor Schede. Bier is only 41, and yet his name has long been quoted as the discoverer of spinal cocainization, and the therapeutic application of passive congestion, or *Stauungshyperemie*. It is a curious fact that he is not at all enthusiastic in regard to spinal cocainization, but expressly warns against its dangers. It owes its vogue entirely to others.

Polar Expedition by a French Physician.—Dr. Jean Charcot is organizing a polar expedition for scientific research, aided by the Académie des Sciences of Paris and the ministry of public instruction, with private subscriptions. He will be accompanied by de Gerlache, the leader of the recent Belgian Antarctic expedition; J. Bonnier, director of a marine laboratory, and several other experts. The Prince of Monaco is interested in the expedition, for which a special ship is being built.

Midwifery and Religious Scruples.—A midwife at Berlin recently refused to assist in an operation required to save the life of the mother but entailing the death of the fetus. Her religion forbade it, she said, and a second midwife had to be procured. Proceedings instituted against her for refusal to obey the physicians' orders resulted in the imposition of a fine and the warning that she must not attempt to serve as a midwife if her religion interfered with her professional duties in such cases.

Secret Medicines in Japan.—Very stringent laws have been enacted in Japan in regard to secret proprietary medicines. The importation of those containing a poison from which accidents might result is absolutely prohibited, as is, also, the sale of those that have deteriorated. The retailer must be informed in regard to the ingredients, proportions and doses, and must specify them in applying to the authorities for permission to sell the medicines. (See the discussion of the papers of Drs. Spratling and Jelliffe in this issue.)

Damages Awarded for Transmission of Syphilis.—The French courts, for the first time, have taken up the matter of venereal transmission of syphilis, and in a suit recently decided at Paris awarded \$2,400 to the victim, a girl of 16. It was established that the young man in question knew that he had syphilis and also was aware of its contagious character, when he commenced the liaison with the girl. It continued for four months before she displayed evidences of infection. The decree states that "the communication of a contagious disease is a misdemeanor (*faute*), even when it does not occur intentionally, and results merely from the imprudence or negligence of the subject."

Blue Electric Light as an Anesthetic.—THE JOURNAL has previously referred to Minin's discovery of the therapeutic and anesthetic value of blue electric light. He has recently found that the anesthesia is sufficient for even important operations, and performed two herniotomies with it practically alone. One was a Bassini on a colonel. Cocain was injected previous to, and the blue light applied during, the operation. In the second case the cocain was omitted, and the ligation of the sac elicited some pain, but not severe. The operation lasted twenty minutes in each, and both healed by first intention. All the minor operations at a certain

hospital at St. Petersburg are done under blue light as the exclusive anesthetic. Minin has just been appointed chief of the Nicolaj Military Hospital.

New Campaign Measure Against Fake Ads.—A pharmacist at Herborn, near Wiesbaden, named Stoll, has made an arrangement with the proprietors of the local daily to have space reserved for him after every fake ad. In this space he describes the substances lauded in the flaming ad. above, and states where they can be obtained and the ordinary price. For instance, a display ad. portraying the virtues of "*homocriana*," at so much a bottle, is followed by his statement that homeriana, or bird's knot grass, is a common weed found along the country roads and can be had at all drug stores for a few pennies. The ad. of the "Volta Cross" was followed by his announcement: "Volta Cross, worth 10 cents (according to proclamation of the Berlin chief of police), sold for 75 cents. The manufacturer has been compelled to leave Berlin and has removed to Munich." Stoll's announcement in the Volta Cross matter forced the town authorities to interfere and regulate its advertisement. One of his ads.: "Common weed, found at the Shooting Park and along the roads, etc.," he inserted twenty-seven times. The manufacturers have now abandoned advertising at Herborn.

Report of Committee on Hypnotism.—The Prussian authorities recently requested of the central medical chamber an opinion of hypnotism. The report was recently mentioned in brief in THE JOURNAL. Professor Mendel, as chairman of the committee, states in the report: "Careful distinction must be made between the cure of an affection and the alleviation of its symptoms by hypnotism. No physician claims that it is possible to cure with it an organic affection susceptible of demonstration with our modern diagnostic measures. But hypnotic or waking suggestion is undoubtedly capable of banishing, usually temporarily but sometimes even permanently, the most widely diverse symptoms of the affection—but without curing it. Success is dependent in this case, as in all cases of suggestion, on the greater or less skill of the suggestor, his personality, on external circumstances and on the degree of receptivity of suggestion by the patient. A number of cases are known in which mental disturbances developed in predisposed individuals under hypnotization. Some of these cases occurred with charlatans, but in others the hypnosis had been conducted by physicians."

Correspondence.

Adenoids as a Route of Tubercular Invasion.

LOS ANGELES, CAL., Feb. 16, 1903.

To the Editor:—In Dr. Freudenthal's article on "Adenoids" in THE JOURNAL, Feb. 7, he says: "If, for some reason or other, the path of the tubercle bacillus downward is closed up, by adenoids or other causes, it makes its way to the cranial cavity, where a tuberculous meningitis, so frequent among children, is set up." Such a statement, coming from a man of Freudenthal's prominence, is likely to lead many into wrong conceptions regarding the method of infection in tuberculosis.

Dr. Freudenthal is challenged to explain the anatomic route and steps of infection from the adenoid to the meninges or to any portion of the body, or to the lungs. A great many writers are advancing the theory that nearly all our tuberculous infections, even of the lungs, are through the tonsils or adenoid tissue. In this country Lartigau is the most prominent claimant for this mode of infection. Notwithstanding the prominence of all these writers, they are challenged to show us definitely and unmistakably, or at least anatomically, how these infections take place. We must ask them, how does the bacillus reach the meninges from an adenoid or from a tonsil? Or, to make the problem easier, how does the bacillus reach the lungs from the adenoid tissue or from the tonsils? If these writers admit that the bacilli enter the blood vessels of the diseased adenoid, we could understand then that it was possible for an infection to take place and in such a manner. Or if they contend that it is the lymphatics that pick up bacilli and convey them to their final destination, we are confronted with the fact that these bacilli are, after all, poured into the great veins in the deep angles of the neck unless arrested in the cervical ganglia.

In any or either event, by whatever anatomic route they may follow, the bacilli are emptied into the right side of the heart, traverse the pulmonary circulation, to be sent—we know not where. One can not feel that adenoids and tonsils play much of a rôle in tuberculous infections of any kind except of cervical ganglia.

Writers have accounted for cerebromeningitis and tuberculous meningitis by entrance of the respective organisms into the cranium through the cribriform plate of the ethmoid. It is true that the dura sends processes along the olfactory nerves and that the lymph radicals of these processes empty into the dural vessels. But really is not this reaching out and dragging anatomy in by the hair of the head when we have the greater possibility of these organisms gaining entrance through the great surface-area of the respiratory mucous membrane?

If we examine into the anatomic distribution of the lymphatics of the nasal, pharyngeal, laryngeal and bronchial mucous membranes, we shall note that a bacterium or other foreign body, to reach the circulation through these, would have to run the gauntlet of a numerous outpost of glands established by Nature in this locality for the very purpose of arresting foreign matter. We know that foreign matter, such as coal dust, does reach these glands for the pigment in them is demonstrable, and still there is, comparatively speaking, very little coal dust that reaches the circulation or the glands themselves, through the lymphatics of the upper respiratory tract. It is but reasonable to believe that micro-organisms arrested in lymphatic glands have less chance of reaching the circulation than if they grew in one of our great organs. Lymphatic glands are especially adapted for the destruction of bacteria and probably do so to a very large extent in all diseases except syphilis and the carcinomata. If bacteria, tubercle bacilli especially, enter our bodies through the tonsils and adenoids, as so many writers would have us believe, I would point out and controvert their position by calling attention to the infrequency of infection of the deep cervical glands through which these organisms would have to travel; and to the further observation made elsewhere, that if bacilli do enter the circulation in this manner, it is, nevertheless, the bronchial glands that show the constant arrest of the organisms. Notwithstanding Lartigau's recent report of finding tubercle bacilli in a large percentage of tonsils and adenoid tissue, it is only fair to presume that there certainly could be little difference in the functions of the cervical and bronchial glands and there is no more valid reason to suspect that bacilli will pass the cervical ganglia without harm than that they will pass the bronchial glands without arrest. It is very likely, then, that the resistance of the deep cervical glands is very effective in barring the entrance of bacteria to the circulation.

Usually the first arrest of bacilli is in the bronchial glands. "Pizzini inoculated lymph glands from forty people who had died of accident or acute disease into guinea-pigs. From the results of the inoculation experiments, he concluded that 42 per cent. of healthy people have tubercle bacilli in their glands, mostly in the bronchial. Statistics of the Paris morgue show that a considerable proportion of all who die of accident or suicide have evidences of some tuberculous disease in connection with the respiratory system" (Lartigau). This observation would lead one to believe that the bronchial glands are combating the constant invasion of small numbers of bacilli more or less successfully; and to have reached the bronchial glands, it is the most reasonable thing to suppose that bacilli have been inspired to the air vesicle itself, penetrated its wall and reached some of the underlying vessels, most often the lymphatic.

Why one should fix his attention on the tonsil or adenoid tissue to explain the infection of tuberculosis is utterly puzzling, when the experiences of the necropsy room show us the lungs of miners, firemen, or those living in dusty environments, pigmented throughout with fine coal deposits. These deposits usually follow the paths of distribution of the lymphatics, and often can be easily traced with the naked eye. In such cases we may find the bronchial glands gritty from

this coal dust which had been arrested by these efficient protectors of our bodies.

If coal dust and other dust reaches the lymphatics of the lungs through the air vesicles, as it certainly does, why need we consider the adenoid, or the tonsil, as the principal path of invasion? If coal dust, then why not tubercle bacilli?

Respectfully yours,

J. O. COBB,

Surgeon, United States Marine-Hospital Service.

The First Hepaticotomy—Credit to America.

FREMONT, OHIO, Jan. 30, 1903.

To the Editor:—Some reviews of the history of surgery on the bile ducts, the German literature especially, give Kocher credit for having made the first hepaticotomy. Professor Courvoisier of Basel, Switzerland, in his work on "Pathology and Surgery of the Bile Ducts," published in 1890, also mentions the fact that Kocher made his first hepaticotomy, 8, xi, 1889. Since history principally consists in recording and comparing facts in their relation to human actions I think I may be justified in referring you to a case which I published in THE JOURNAL of the American Medical Association, March 31, 1888, under the title "Operation for Gallstones; Congenital Absence of Gallbladder." It is probably due to the fact that I did not coin a new Greek name for this operation that it has been overlooked, as in all other details it could be called a hepaticotomy. I wrote to Professor Courvoisier about 10 years ago and sent him a copy of the article, in response he said that he did not have access to that number of THE JOURNAL before, but that in his future publications he would give due recognition to the above fact. This has not been done so far, not in Kocher's and Quervain's "Encyclopædie der gesammten Chirurgie," where Courvoisier writes on hepaticotomy, nor in the latest number of the *Archiv f. Klinische Chirurgie*, vol. 69, where Erich Berger reports on hepatic drainage in Professor Hans Kehr's klinik.

M. STAMM.

State Boards of Registration.

New Arkansas Law.—The new medical practice act passed by the Arkansas legislature and signed by the governor goes into effect 90 days from date of its passage, or early in April of this year. It provides for three boards, homeopathic, eclectic and regular, appointed by the governor from lists furnished by the respective state medical societies. These are to hold four regular stated examinations each year, on the second Tuesdays in January, April, July and October, at such place as the majority may agree on, after consulting the convenience of the boards and the applicants for examination. Any one hereafter desiring to practice medicine in Arkansas must go before a board, making his application to the secretary, with a \$10 fee, and submit to examination, which may be written or oral, at the discretion of the board. It must be of a practical character, including anatomy, physiology, chemistry, materia medica, theory and practice of medicine, surgery and obstetrics. If the applicant possesses the necessary qualifications, in the opinion of the board, a certificate will be granted. Certificates must be recorded in the office of the county clerk where the holder is practicing. Temporary permits are allowed on the payment of a \$10 fee, but can not continue in force beyond the next meeting of the board, and may in no case be granted within six months after refusal of certificate. No fee is to be charged an applicant who has previously paid the charge for a temporary permit. The penalty for irregular practice is a fine of not less than \$25 nor more than \$500, or by imprisonment in the county jail of not less than ten days or more than ninety days, or both. Each day of such practice shall constitute a separate offense. Any person is regarded as practicing medicine in any of its departments within the meaning of the act who shall append M.D. or M.B. to his name, or repeatedly prescribe or direct for use to any person or persons any drug, medicine or other agency for the treatment, cure or relief of any bodily injury, deformity or disease, provided that nothing in the act shall be so construed as to prevent the gratuitous administering of domestic remedies or shall apply to midwives. Nothing is specified as regards diplomas, which seem not to be required.

Kansas.—Dr. H. W. Roby, secretary of the Kansas State Board of Medical Registration and Examination, reports the examination held at Topeka, Feb. 10 and 11, 1903, as follows: Number of subjects examined in, 9; total number of questions, 90; percentage required to pass, 70; the examination is written, except in case of those physically unable to write, as paralytics or invalids; total number examined, 22; passed, 20; failed, 2.

Candi.	Sch. of date.	Pract.	PASSED.		Year Grad.	Per Cent.
				College.		
1	R.		Rush Medical College, Chicago.....		1900	79
3	R.		Rush Medical College, Chicago.....		1888	71
13	R.		Rush Medical College, Chicago.....		1902	82
16	R.		Rush Medical College, Chicago.....		1893	81
2	R.		University Med. Coll., Kansas City, Mo.		1897	71
11	R.		University of Pennsylvania.....		1898	79
4	H.		Cleveland Homeopathic Medical College		1877	70
5	R.		Kansas City Medical College.....		1887	70
7	R.		Kansas City Medical College.....		1898	82
6	E.		Eclectic Medical Institute, Cincinnati..		1856	70
8	R.		Am. Med. Missionary Coll., Chicago...		1900	78
9	H.		Chicago Homeopathic Medical College.		1901	87
10	H.		Hahnemann Med. Coll., Kansas City...		1902	83
12	R.		Ohio Medical College.....		1902	75
14	R.		Bellevue Hospital Medical College....		1890	83
15	R.		College of Phys. and Surgs., Baltimore		1902	79
17	R.		Louisville Medical College.....		1895	75

FAILED.

22	R.		Kansas City Medical College.....		1901		61
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NOTE.—Three other applicants passed and one failed, who had been previously examined as non-graduates and now took further examination in view of the law requiring all candidates to be graduates.

Indiana.—Dr. W. F. Curryer, Indianapolis, secretary of the Indiana Board of Medical Registration and Examination, reports the examination held at Indianapolis in January, 1903, as follows: Number of subjects examined in, 18; total questions, 130; percentage required, 75; written examination; examined, 54; passed, 46; failed, 8.

			PASSED.			
Candi.	Sch. of				Year	Per
date.	Pract.		College.		Grad.	Cent.
1	R.	Kentucky	School of Medicine.....	1902	90.7	
2	R.	Kentucky	School of Medicine.....	1902	92.5	
3	R.	Kentucky	School of Medicine.....	1902	84.2	
6	R.	Kentucky	School of Medicine.....	1902	84.0	
27	R.	Kentucky	School of Medicine.....	1902	92.8	
28	R.	Kentucky	School of Medicine.....	1902	82.3	
29	R.	Kentucky	School of Medicine.....	1902	87.3	
38	R.	Kentucky	School of Medicine.....	1901	73.8	
44	R.	Kentucky	School of Medicine.....	1901	68.3	
45	R.	Kentucky	School of Medicine.....	1902	75.9	
46	R.	Kentucky	School of Medicine.....	1902	75.6	
49	R.	Kentucky	School of Medicine.....	1902	91.6	
7	R.	Rush	Medical College.....	1898	91.3	
9	R.	Rush	Medical College.....	1901	91.9	
22	R.	Rush	Medical College.....	1895	82.9	
26	R.	Rush	Medical College.....	1902	94.4	
31	R.	Rush	Medical College.....	1902	92.7	
32	R.	Rush	Medical College.....	1902	93.6	
33	R.	Rush	Medical College.....	1902	90.8	
34	R.	Rush	Medical College.....	1902	92.6	
8	R.	Harvey	Medical College.....	1902	93.9	
10	R.	Marion Sims-Beaumont	.....	1902	88.1	
12	R.	Marion Sims-Beaumont	.....	1902	83.6	
11	R.	University of Pennsylvania	.....	1902	92.5	
13	R.	Starling	Medical College.....	1901	79.2	
14	R.	Miami	Medical College.....	1902	83.0	
15	R.	University of Michigan	.....	1902	88.1	
30	R.	University of Michigan	.....	1902	90.7	
21	R.	University of Michigan	.....	1902	90.2	
36	R.	University of Toronto	.....	1894	94.8	
37	R.	University of Lausanne, Switzerland	.....	1899	92.1	
40	R.	University of Budapest.....	.....	1900	87.3	
41	R.	University of Illinois.....	.....	1902	92.2	
16	R.	College of Phys. and Surgs., Chicago	.....	1900	88.1	
42	R.	College of Phys. and Surgs., Chicago	.....	1900	92.6	
17	H.	Western Reserve Medical College...	.....	1902	93.6	
18	R.	Medical College of Ohio.....	.....	1888	85.9	
55	R.	Medical College of Ohio.....	.....	1877	64.4	
19	H.	Hahnemann Med. Coll., Chicago....	.....	1902	84.2	
24	H.	Hahnemann Med. Coll., Chicago....	.....	1901	91.6	
48	H.	Hahnemann College of Philadelphia.	.....	1902	93.6	
23	R.	Northwestern Univ. Med. School....	.....	1892	90.2	
25	R.	Trinity College, Toronto.....	.....	1902	89.7	
35	R.	Jefferson Medical College.....	.....	1902	93.5	
43	R.	Jefferson Medical College.....	.....	1901	91.8	
39	R.	Kentucky University Medical Dept..	.....	1901	94.6	
47	R.	Harvard University.....	.....	1902	94.5	
50	R.	Illinois Medical College.....	.....	1902	90.8	
52	R.	Illinois Medical College.....	.....	1902	91.9	
53	R.	Chicago Medical College.....	.....	1887	85.0	
54	R.	Hamlin University.....	.....	1901	84.1	

FAILED.

4	R.		Ohio Medical University.....		1897		75.2
5	R.		Louisville Medical College.....		1901		77.9
51	R.		College of Phys. and Surgs., Keokuk		1885		*

* Incomplete.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

PRIORITY IN COLLES' FRACTURE REDUCTION METHOD.

CHICAGO, Feb. 23, 1903.

To the Editor:—On page 542 of your February 21 issue I notice an item from the *Northwestern Lancet*, Minneapolis, by A. M. Pond, on "Some Considerations of Colles' Fracture." The method of reduction which he describes is not original, as it has been delineated at some length by Joseph Griffiths in the *British Medical Journal* of Dec. 7, 1901. I am in perfect accord with the treatment and results obtained as I have used the same method for some time, my attention being first directed to it by the article above named.

ARTHUR ARWELL SMALL.

Ans.—Pond said he had never seen the method described.

ARTIFICIAL MUD BATHS WANTED.

CONFLUENCE, PA., Feb. 16, 1903.

To the Editor:—Please inform me where I can get fango for mineral mud treatment as mentioned in *THE JOURNAL*, p. 447, February 14; also where I can get additional literature on the treatment.

R. J. HEMMINGER.

Ans.—Fango is the name used in Italy for the mud-bath treatment. The material is said to be a sort of finely divided volcanic earth. We presume that it has no very special properties over those possessed by the medical mud baths in this country. We know of no way by which it could be obtained in this country. There is no special literature known to us on the "fango" treatment in our language, and not very much on mud baths, except what is given in general works on balneology, etc.

MEDICAL PRACTICE QUERIES.

BLOOMFIELD, IOWA, Feb. 23, 1903.

To the Editor:—Please inform me as to the requirements to practice medicine in Kansas, also the name of the secretary of the state board, with address.

C. L. KEMBEL.

Ans.—A diploma and examination are, we believe, now required. Dr. H. W. Roby, Topeka, Kan.

BALTIMORE, Feb. 15, 1903.

To the Editor:—Will you kindly inform me if the Maryland State Board will register any one who has successfully passed the Pennsylvania Board, without requiring an examination in Maryland? If they do, how much registration fee.

Yours most respectfully, A. H. BRAECKLEIN.

923 Barre Street.

Ans.—The board of examiners are authorized to do so if they consider the requirements equal to their own. Write them.

Marriages.

D. L. ROSE, M.D., Sherman, Mich., to Miss Gale Hooper of Battle Creek, Mich., January 31.

CYRUS W. STRICKLER, M.D., to Miss Annie Virginia Williams, both of Atlanta, Ga., February 25.

G. H. RATHBUN, M.D., Roubaix, S.D., to Miss Mollie McArthur, at Lead, S.D., February 9.

WILLIAM W. MELOY, M.D., Chicago, to Miss Charlotte A. Logan of Brooklyn, N. Y., February 25.

Deaths.

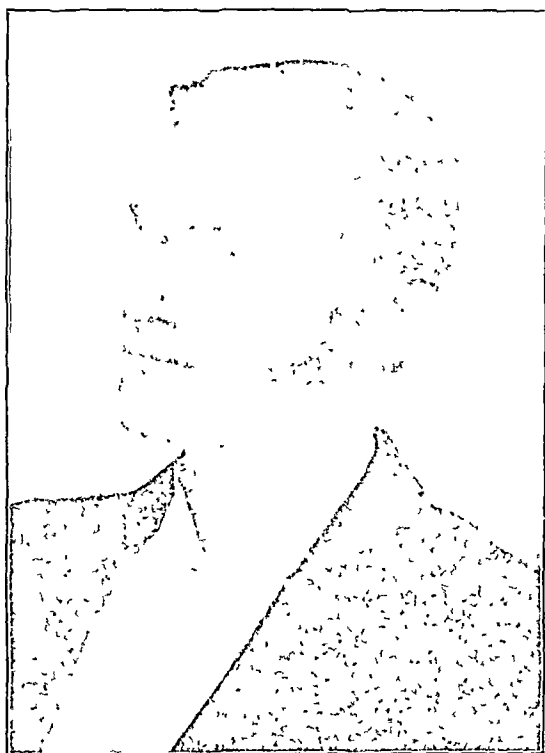
William Elias Brownlee Davis, M.D.

A telegram received by *THE JOURNAL* just before going to press announces that Dr. W. E. B. Davis was killed Tuesday night, February 24, by being thrown under a moving train by a frightened horse. Thus suddenly has ended a life of more than ordinary usefulness, and the shock will be felt not only in the south, where he was so well known and loved, but all over the country. The loss to the profession is great; he was, first and always, a polished gentleman; in his chosen field of gynecology and surgery he was a leader of men, and in his intercourse with his professional fellows he was the personification of ethical courtesy.

He was born in Trussville, Ala., Nov. 25, 1863, and was, therefore, 39 years of age. He was the third in a line of

physicians. After being graduated from the University of Alabama, he took up the study of medicine in 1881 under the preceptorship of his brother, Dr. J. D. S. Davis of Birmingham. After attending three courses of lectures, the last of which was taken at Bellevue Hospital Medical College, he was graduated from that institution in 1884. He then practiced in Birmingham with his brother for three years, after which he studied in the hospitals of London, Berlin and Vienna for two years. On his return to America he practiced for a short time in Rome, Ga., and then returned to Birmingham, where he since resided and practiced with his brother, Dr. J. D. S. Davis, devoting his attention chiefly to operative gynecology.

He was an honored member of many medical societies—the American Medical Association, vice-president in 1891, secretary of the Section on Surgery in 1890, and chairman of the Section on Obstetrics and Diseases of Women in 1899; Medical Association of the State of Alabama; Jefferson County Medical Society; Birmingham Medical Society; Southern Surgical and Gynecological Association, secretary, 1888 to 1900, and president, 1901-1902; American Association of Obstetricians and Gynecologists, vice-president in 1895, member of executive council, 1897-1900, and president, 1901; honorary president of the Section on Gynecology and Abdominal Surgery of the first



WILLIAM ELIAS BROWNLIE DAVIS, M.D.

Pan-American Medical Congress, Washington, D. C., 1893; honorary member of the British Gynecological Society; one of the founders of the Alabama Surgical and Gynecological Association, and its secretary in 1887-1888; Tri-State Medical Society of Alabama, Georgia and Tennessee, and its president in 1892; honorary member of the Medical Society of the State of New York.

He was surgeon to the Birmingham Hospital of United Charities in 1891-1892, and through his efforts a department of diseases of women was established. In 1894 he was elected professor of gynecology, obstetrics and abdominal surgery in the Birmingham Medical College.

Dr. Davis and his brother were editors of the first medical journal to be published in Alabama, the *Alabama Medical and Surgical Journal*, in 1886 and 1887; from 1890 to 1893 he was editor of the gynecological department of the *Alabama Medical and Surgical Age*, and he was associate editor of the *American Gynecological Journal*. His contributions to medical literature were numerous and valuable. Most of his later work was in the line of abdominal surgery, surgery of the bile-ducts.

He was buried from the South Side Baptist Church, Birmingham, February 27, at 11 a. m.

John Frank Valentine, M.D. College of Physicians and Surgeons, New York, 1879, for 12 years surgeon of the Thirty-second Regiment, N. G., S. N. Y., coroner's physician, chief surgeon of the Long Island Railroad, member of the Queens-Nassau Medical Society, and past president of the New York

State Association of Railway Surgeons, died from typhoid fever at his home in Richmond Hill, Long Island, February 5, after an illness of several weeks, aged 46. The medical staff of St. John's Hospital, of which Dr. Valentine was president, at a special meeting, February 6, passed resolutions of respect and regret.

Caleb W. Hornor, M.D. Jefferson Medical College, Philadelphia, 1849, who did a large and distinguished work during the Civil War, being in charge of various important hospitals and chief medical officer of the Freedmen's Bureau, in the course of which he organized and administered over 80 hospitals and dispensaries throughout the south, died at his home near Bryn Mawr, Pa., February 8, from pneumonia, after an illness of two weeks, aged 74. He was a member of the American Medical Association.

Earle Eugene Woolworth, M.D. New York University, 1897, died February 5 at the Brooklyn Hospital from injuries received in a runaway accident, January 21, aged 30. He resided in Brooklyn and was a member of the New York State Medical Association, the Kings County Medical Society and the Alumni Association of the City Hospital.

Vincent P. Kennedy, M.D. Rush Medical College, 1856, a pioneer resident of Meeker County, Minn., surgeon of the Fifth Minnesota Volunteer Infantry in the Civil War, a member of the state legislature for two terms, died from uremia at his home in Litchfield, Minn., February 13, aged 79. He retired from active practice in 1888.

Harry Herbert Hurst, M.D. University of Pennsylvania, Philadelphia, 1897, member of the Pittsburgh Pathological Society and former president of the Wilkinsburg Medical Club, died at his home in Wilkinsburg, Pa., from typhoid fever, January 31, after an illness of five weeks, aged 28.

Benjamin T. Shimwell, M.D. Jefferson Medical College, Philadelphia, 1875, formerly professor of surgery at the Medico-Chirurgical College, and a member of the American Medical Association, died at the Medico-Chirurgical Hospital, Philadelphia, from consumption, February 5, aged 51.

Gustavus Bruhl, M.D. University of Munich, Bavaria, 1848, a member of the American Medical Association, and an ardent student of ethnology and history, died from apoplexy at his home in Cincinnati, February 16, aged 76.

Henry Hulme Warburton, M.D. London Hospital School of Medicine, the pioneer physician of the Pacific Coast, where he had practiced since 1847, died at his home in Santa Clara, Cal., from pneumonia, February 9, after an illness of four days, aged 83.

James H. O'Toole, M.D. Medical School of Maine, Bowdoin College, Brunswick, 1880, a member of the Massachusetts Medical Society, died from angina pectoris at his home in Charlestown, Mass., January 27, after a short illness.

Frank O'Neil, M.D. University of Southern California, Los Angeles, Cal., a member of the medical staff of the Southern Pacific Railway, died at a construction camp 80 miles west of Nevada City, January 19, from pneumonia.

David Munro, M.D. Faculty of Medicine of Queen's University and Royal College of Physicians and Surgeons, Kingston, Ontario, 1867, died suddenly from heart disease at his home in Perth, Ont., February 7, aged 61.

Nelson B. Sisson, M.D. University of Louisville, Ky., 1846, died at his home in Porter, Ohio, January 28, aged 82. During the Civil War he served as assistant surgeon of the Ninety-second Ohio Volunteer Infantry.

Edward von Donhoff, M.D. Heidelberg, Germany, formerly professor of surgery in Louisville Medical College, died in Bellevue Hospital, New York, from the excessive use of drugs and dissipation, February 7.

Charles C. Warden, M.D. Ohio Medical College, Cincinnati, 1843, the first physician to locate in Ottumwa, Iowa, who retired from practice in 1856, died at his home in Ottumwa, February 14, aged 86.

Flavien Dupont, M.D. Laval University, Quebec, 1880, formerly of Montreal, but for the last three years a resident of Boston, died at Notre Dame Hospital, Montreal, from Bright's disease, aged 40.

John Morris, M.D. Starling Medical College, Columbus, Ohio, died at his home in Chicago, from heart disease, after a long illness, aged 67. He had not practiced since the close of the Civil War.

Henry Tomboeken, M.D. Rush Medical College, Chicago, 1866, who retired from practice in Chicago in 1898, died at

Terre Haute, Ind., from cancer of the stomach, February 7, aged 65.

Walter Pardee, M.D. Cleveland (Ohio) University of Medicine and Surgery, 1860, died at the home of his son in New York City, February 11, after an invalidism of twenty years, aged 80.

Gertrude H. Woodworth, M.D. Hahnemann Medical College, Chicago, 1897, died at her home in Chicago, February 10, from the effects of chloroform taken with suicidal intent, aged 55.

Doctor N. Porter, M.D. Kentucky School of Medicine, Louisville, 1851, who retired from active practice ten years ago, died suddenly at his home in Eminence, Ky., January 29, aged 87.

John C. Whaley, M.D., state senator, and for many years a practitioner of Osceola, Mo., died at his home in that city, February 3, from pneumonia, after a short illness, aged 64.

Alonzo D. Root, M.D. Cleveland Medical College, 1871, died at his home in Crete, Neb., from chronic Bright's disease, after an illness of several years, February 8, aged 66.

George A. Harris, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1873, died suddenly from heart disease at his home in Bridgeton, N. J., February 9, aged 58.

John E. Wood, M.D. Starling Medical College, Columbus, Ohio, 1894, died at his home in Marysville, January 27, from consumption, after an illness of four years, aged 29.

George H. Douglas, M.D. Tulane University, New Orleans, 1886, quarantine surgeon at, and formerly mayor of, Morgan City, La., died recently at Pensacola, Fla., aged 42.

Henry M. Ptolemy, M.D. Detroit College of Medicine, 1889, died at his home in Brighton, Mich., February 16, from Bright's disease, after a lingering illness, aged 47.

Charles B. Leavitt, M.D. University of Pennsylvania, Philadelphia, 1882, died at his home in Trenton, N. J., from pneumonia, February 8, after an illness of two weeks.

Henry Newland, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1876, died at his home in Los Angeles, Cal., January 7, after an illness of two years, aged 75.

Ralph L. Seckler, M.D. University Medical College of Kansas City, Mo., 1900, of Basehor, Leavenworth County, Kan., died recently in San Francisco, from paralysis.

Charles Wetherill Gambes, M.D. Jefferson Medical College, Philadelphia, 1864, died suddenly from heart disease at his home in Oaks, Pa., January 31, aged 62.

Frank C. Hoegel, M.D. Western Pennsylvania Medical College, Pittsburg, Pa., 1897, died from typhoid fever at his home in Allegheny, Pa., February 2, aged 27.

John M. McFarland, M.D. Tulane University, New Orleans, 1870, died at his home in Rivera, Cal., February 13, aged 55.

David F. Van Aken, M.D. Albany Medical College, 1860, died at his home in Malden, N. Y., January 30, aged 69.

Association News.

THE NEW ORLEANS NUMBER.

Announcement of the Special Number of THE JOURNAL for April 11.

The issue of THE JOURNAL of April 11 will be the special New Orleans Number and will be an announcement of the coming fifty-fourth annual meeting of the American Medical Association, to be held at New Orleans May 5 to 8, 1903. It will contain an illustrated article on Louisiana and New Orleans, their history and points of interest, and will give all the facts possible about the arrangements for the meeting, including a list of hotels, with rates, railroad rates, fare from important centers, announcement of special trains, side trips, excursions, opportunities for sight seeing, entertainments, schedules of meetings, places of meeting, etc. It will also contain the preliminary program of each of the sections.

In this number all special trains should be announced. We therefore ask every committee or official to send us at an early date detailed information of such trains as may be arranged. The Mississippi River excursion to New Orleans, mentioned on page 532 last week, and the ocean trip from Boston and New York, suggested in this issue, are attractive features that should be fully announced in the April 11 issue. We desire to receive information also of any other features

not mentioned above, which will be of interest to some or all of the several thousands who are expected at New Orleans.

RATES TO NEW ORLEANS.

One Fare in Southwestern Association Territory—One and One-Third in Transcontinental.

The following letters explain themselves. The Southwestern Passenger Bureau includes railroads operating in Texas, Oklahoma and Indian Territories and the southern half of Missouri.

Southwestern Passenger Bureau.

ST. LOUIS, Jan. 27, 1903.

S. P. B. CIRCULAR LETTER, No. 5827. PROPOSITION ACCOUNT ANNUAL MEETING, AMERICAN MEDICAL ASSOCIATION, NEW ORLEANS, MAY 5-8, 1903, ADOPTED.

To Interested Lines:—Referring to S. P. B. Consultation Letter No. 843 submitting the following to apply from points in Texas, account annual meeting, American Medical Association, New Orleans, La., May 5-8, 1903:

RATE.—One regular, first-class fare for the round trip.

DATES OF SALE.—May 3 and 4, 1903.

LIMITS.—Tickets to bear continuous passage transit limit in each direction, with final limit of May 16, 1903.

EXTENSION.—If tickets are presented in person by original purchasers and fee of 50 cents paid to Special Agent on or before May 12, 1903, extension of final limit may be secured to and including May 30, 1903.

Special Agency will be conducted in the name of Mr. Joseph Richardson at Room 204, No. 204 Camp Street, New Orleans, and will be open between the hours of 8 a. m. and 8 p. m., tickets to be withdrawn only on the date on which they are to be used, and to be available for passage leaving New Orleans only on such date. The extension of limit to in no case exceed midnight of May 30, 1903.

The Special Agent will use pasteur bearing fac-simile signature of Joseph Richardson.

No objection having been recorded, the proposition is hereby declared adopted.

Respectfully, (Signed) C. M. PRATT, Chairman.

Transcontinental Passenger Association.

CHICAGO, Feb. 5, 1903.

MEETING OF AMERICAN MEDICAL ASSOCIATION, NEW ORLEANS, MAY 5-8, 1903.

Edmond Souchon, M.D., Chairman Committee on Transportation, New Orleans.

Dear Sir:—In reply to your favor of 2d instant I beg to say that the attendance from the states from which our lines sell, namely, California, Nevada, Washington and Oregon, will doubtless be so small as not to justify the making of any special reduced rate from those states.

Delegates may, however, avail themselves of the regular nine months' rate, which is in effect daily from Pacific Coast points to New Orleans, and which approximates two cents per mile in each direction, or about one fare and a third for the round trip.

Should it happen that your delegates apply at a station on Pacific Coast from which the nine months' rate is not in effect, which may be the case at very small, unimportant stations, the agent will cheerfully ascertain and advise them the nearest point to his station from which such rate does apply.

It is hoped that the foregoing will be satisfactory to you.

Respectfully, (Signed) J. CHARLTON, Chairman.

To New Orleans from Boston by Sea.

PLYMOUTH, MASS., Feb. 18, 1903.

To the Editor:—Will you kindly tell me: 1. What is the rate of fare from Boston to New Orleans to the annual meeting? 2. How do I get the reduced rate? 3. Is there any reduced rate by boat from Boston or New York to New Orleans? 4. Are there any reduced hotel rates? 5. Can I take my wife at same rate as myself? Yours truly,

H. H. BURNS.

Answer.—Concerning all your questions read what is said on this page under the head of "New Orleans Number." 1. We are informed that the regular one-way rate is about \$39, divided as follows: Boston to New York about \$5, New York to

Washington \$6.50, Washington to New Orleans, \$27.50. The rate from Washington to the New Orleans meeting will be one fare for the round trip. East of Washington we are not informed as to the rates granted. As soon as we are, they will be announced in *THE JOURNAL*. If the same rate is given in the east as the southeast, it would make the round trip from Boston to New Orleans about \$39. 2. Ask your ticket agent or the agent of the Boston and Albany R.R. in Boston. Consult *THE JOURNAL*, January 3, p. 46, and January 31, p. 325. 3. None to our knowledge. There should be. Some of the New York and Boston physicians may work this up. 4. None have been announced. 5. Yes.

Medical Organization.

Official Representative On Organization.

At the annual meeting of the Board of Trustees of the American Medical Association, held in Chicago, February 20-21, Dr. J. N. McCormack was asked by the board to devote his whole time to the work of organization as the representative in this work of the American Medical Association. Dr. McCormack has accepted the position and will immediately enter on his duties. It is expected that he will spend much of his time in the field and will be at the command of such state societies as may think his services can be made useful to them. It is suggested that officers of the various state societies and such committees as have this work of organization in charge, especially the councilors of the reorganized state societies, will put themselves in communication with him, with a view of co-operation in the work. Such co-operation will consist in both correspondence and personal visits on the part of Dr. McCormack, as may be desired. All correspondence in the future in regard to organization should be directed to Dr. J. N. McCormack, Bowling Green, Ky.

Effect of Organization.

A correspondent from Little Rock, Ark., sends us a copy of the new medical practice act just passed and signed by the governor, and says, "Although only in the incipency of organization, we were able only by this means to get the bill through our legislature. Heretofore lack of organization made it easy for any organized effort to oppose and defeat us."

Defiance County (Ohio) Medical Society.

At a very full regular meeting in Defiance, February 11, this society adopted the constitution proposed by the committee of the American Medical Association.

Franklin County (Tenn.) Medical Society.

This society was organized at Winchester, February 19, with Dr. Flavel B. Sloan, Cowen, president; Dr. Thomas B. Anderson, Winchester, vice-president, and Dr. Garner S. Warren, Decherd, secretary.

Hamilton County (Iowa) Medical Society.

This society was organized February 7. Dr. Frank E. Whitley was elected president; Dr. Alanson M. Pond, vice-president; Dr. Carl W. Rummel, secretary, and Dr. Belle Conrad, treasurer, all of Webster City.

Lenawee County (Mich.) Medical Society.

On January 13, at Adrian, this society was reorganized with the assistance of Dr. Albert E. Bulson, councilor for the district. The constitution and by-laws suggested by the American Medical Association for county societies were adopted, and Dr. Clifford Kirkpatrick re-elected president and Dr. David L. Treat, secretary and treasurer, both of Adrian.

Licking County (Ohio) Medical Society.

The Licking County physicians met at Newark, February 12, and organized this society, electing Dr. Anderson T. Speer, Newark, president; Dr. Charles A. Foster, Newark, vice-president; Dr. George W. Garrison, Utica, treasurer; Dr. H. Burner Anderson, Newark, secretary, and Drs. B. H. Barnes, William H. Knauss and Cary F. Legge, all of Newark, censors. A committee on constitution and by-laws was also appointed.

Madison County (Ky.) Medical Society.

The physicians of Madison County met at Richmond, February 5, to consider the question of organization. After an address by Dr. Isaac A. Shirley, Winchester, councilor of the Tenth District, a permanent organization was effected, with Dr. James M. Poyntz, Richmond, president, and Dr. Murison Dunn, Richmond, secretary. The constitution and by-laws prepared by the American Medical Association were adopted.

Menominee County (Mich.) Medical Society.

Dr. Theodore A. Felch, Ishpeming, councilor for the Twelfth District, met with the physicians of the county at Menominee, January 14, explained the plan of reorganization suggested by the American Medical Association, and perfected the organization of the county society. Dr. Benjamin T. Phillips, Menominee, was elected president; Edward Sawbridge, Stephenson, vice-president; Dr. Peter J. Noer, Menominee, secretary and treasurer, and Drs. Walter R. Hicks, Eugene J. Grignon, and John F. Hicks, all of Menominee, directors.

Societies.

Pasadena (Cal.) Medical Society.—At the annual meeting, January 13, Dr. Charles D. Lockwood was elected president; Dr. Fitch E. Mattison, vice-president, and Dr. John E. Janes, secretary and treasurer.

Polk County (Neb.) Medical Society.—The physicians of Polk County recently met at Osceola and organized a county society, with Dr. Carrie L. Heald as president and Dr. L. Matt Shaw, secretary-treasurer, both of Osceola.

Merrick County (Neb.) Medical Society.—The physicians of the county met in Central City, January 13, and organized a county society auxiliary to the Nebraska State Medical Society. Dr. E. A. Benton, Central City, was elected president.

Marquette County (Mich.) Medical Society.—This society, at its annual meeting in Marquette, January 13, elected Dr. John H. Andrus, Ishpeming, president; Dr. Harry J. Hornbogen, Marquette, treasurer, and Dr. George D. Beach, Champion, secretary.

Van Buren County (Mich.) Medical Society.—The first annual meeting was held at Hartford, January 13. Dr. George D. Carnes, South Haven, was elected president; Dr. James Murphy, Bangor, vice-president, and Dr. Norris A. Williams, Bangor, secretary and treasurer.

Kaufman County (Texas) Medical Society.—At the annual meeting held in Kaufman, January 13, Dr. William H. Monday, Terrell, was elected president; Dr. Burrell J. Hubbard, Kaufman, vice-president; Dr. Willis J. Pollard, Kaufman, secretary, and Dr. Delana P. Hicks, Kaufman, treasurer.

Jackson County (Iowa) Medical Society.—At the annual meeting, held in Maquoketa, January 29, Dr. William C. Post, Welton, was elected president; Dr. George M. Johnson, Maquoketa, vice-president; Dr. J. O. Ristine, Iron Hills, secretary, and Dr. Willis A. Scott, Maquoketa, treasurer.

Rolla District (Mo.) Medical Society.—At the semi-annual meeting held in Rolla, Dec. 11, 1902, Dr. James P. Dunigan, Sullivan, was elected president; Dr. Stuart L. Bay-singer, Rolla, vice-president; Dr. Samuel B. Rowe, Rolla, secretary, and Dr. Samuel H. Headlee, St. James, treasurer.

Hawaiian Territorial Medical Society.—At a recent meeting held in Honolulu the following officers were elected: Dr. H. C. Sloggett, president; Dr. W. L. Moore, vice-president, and Dr. Jonathan T. McDonald, secretary and treasurer, all of Honolulu. The annual meeting will be held at Honolulu, November 7.

Center County (Pa.) Medical Society.—At the annual meeting, February 10, the following officers were elected: President, Dr. Charles E. McGirk, Phillipsburg; vice-presidents, Drs. Edwin S. Dorworth, Bellefonte, and W. U. Irwin, Fleming; secretary, Dr. J. Y. Dale, Lemont; treasurer, Dr. Geo. F. Harris, Bellefonte.

Riverside County (Cal.) Medical Society.—At the quarterly meeting held in Riverside, January 13, Dr. Oscar J. Kendall was elected president; Dr. Charles W. Girdlestone, vice-president, and Dr. William W. Roblee, secretary and treasurer, all of Riverside. The society voted to affiliate with the Medical Society of the State of California.

Oklahoma Territorial Medical Association.—At the annual meeting held in Enid, January 15, the following officers

were elected: Dr. John A. Hatchett, El Reno, president; Drs. Orlando D. Taft, Garber, and Roger L. Hall, Medford, vice-presidents, and Dr. Mahlon A. Kelso, Enid, was, for the third time, re-elected secretary and treasurer.

Warren County (Ky.) Medical Society.—At the annual election held in Bowling Green, January 10, Dr. Thomas W. Stone, Bowling Green, was elected president; Dr. Eldon N. Hall, Woodburn, vice-president; Dr. Fred D. Cartwright, Bowling Green, secretary and treasurer, and Dr. J. N. McCormack, Bowling Green, delegate to the Kentucky State Medical Society.

Washington County (R. I.) Medical Society.—At the annual meeting in Westerly, January 8, the following officers were elected: Dr. C. Grant Savage, Westerly, president; Drs. Milton A. Duckworth, Carolina, and Edward J. Knerr, Hope Valley, vice-presidents; Dr. J. Howard Morgan, Westerly, secretary and treasurer, and Dr. Elisha P. Clarke, Hope Valley, Auditor.

Tri-County (Cal.) Medical Society.—This society, which includes the physicians of San Benito, Monterey and Santa Cruz counties, met in Watsonville, January 6, and elected the following officers: President, Dr. Frank H. Patterson, San Juan; vice-presidents, Drs. Spencer C. Rodgers, Watsonville, Henry C. Whiting, Santa Cruz, R. W. O'Bannon, Hollister, and Dorus Brumwell, King City, and Dr. Saxton T. Pope, Watsonville, secretary.

Green County (Ohio) Medical Society.—This society met, February 5, at Xenia. Drs. Horace Bonner, Dayton, Brooks F. Beebe, Cincinnati, and Dr. C. L. Bonifield, Cincinnati, presented convincing arguments why this society should affiliate with the state society and adopt the by-laws as suggested by their committee. The discussion of the question of new by-laws occupied so much time that their further discussion and adoption was laid over until the next meeting, March 5.

CINCINNATI ACADEMY OF MEDICINE.

Regular Meeting, held Feb. 16, 1903.

The President, Dr. A. B. Isham, in the Chair.

The evening was devoted to the consideration of "Medical Organization."

The Subject Stated.

DR. BROOKS F. BELBE, chairman of council, Ohio State Medical Association, said in substance: Not a physician's name in the hall of fame; no just recognition of his worth by the public at large; intelligent, law-abiding, unselfish, as he is, conscientious in his work; progressive in his methods and his science; altruistic to a degree not equaled by others; still, medical men, with rare exceptions, do not occupy that place in the world of affairs that they should. Neither do they exert that influence of which they are capable, nor meet with the pecuniary reward that should be theirs. Where lies the fault? Chiefly in themselves. Only 30,000 out of a possible 120,000 physicians in the United States belong to medical societies. Three times as many out as in. Are we three times as bad as we should be? Why is it that physicians are so apathetic, indifferent, ignorant of the practical value of membership in medical societies, which fact is undoubtedly responsible for their unfortunate condition? While recognizing that knowledge is power, we sit down comparatively comfortable and contented, refusing to exert ourselves in the way that demands and secures recognition of our rights, of our worth and of our power. How may we change this order of things? Changed it must be, and already it is becoming different in some sections of the United States. A new era in medicine is unquestionably ours; and a new history is being written for us. Evolution is becoming revolution in medical affairs, at least in our own state and a few others, and it is to be hoped and expected that the work of progress that has recently been started will sweep the country from ocean to ocean and from the lakes to the very gulf.

While we are looking for the millenium, it can not be denied that the ideal in medicine is far from the real—nor, again, that the real may not be made to approach a little more closely the ideal. We may say that a physician's work or life may be viewed from three aspects: first, the scientific or purely professional; second, the social or companionable mingling together; and third, the business side, which looks after the

material gain that is so necessary and utilitarian. When these three qualifications are properly combined, we have what may be considered an ideal medical character. The question, therefore, is, how may we obtain, even approximately, this desirable state? At the last meeting of our Ohio State Medical Association a new constitution and by-laws were unanimously adopted, and if Cincinnati and Hamilton County are to be represented, the Academy of Medicine of Cincinnati must become "a component society" of the state association, representing and including all the eligible physicians of the county.

Among other things that were done at this meeting, was the election of what is called a council, really a committee, composed of ten members of the association, selected from different parts of the state, whose duty it is to go about organizing and reorganizing medical societies in the different counties and looking after the interests of the profession in every possible manner. Greatness has been thrust on me, great work at least, in that I am one of the unfortunates selected to help perform this important duty. While I find it somewhat arduous, it is also very pleasant, and I find myself taking a very great interest because of the many good results being observed. My district is composed of nine counties in southwestern Ohio and I am taking much pleasure in assisting to form and increase the interest in these medical societies.

As the most of you know, an invitation from me as state councilor has been extended to you of Cincinnati to go to these outside county medical societies and render your quota of assistance. Of two hundred of these invitations sent among you, I have received favorable replies from about one hundred. This list will be sent to the secretaries of the various county societies of Ohio and to the nearby counties of Indiana and Kentucky; from it selections will be made by the secretaries and invitations will be sent to you to read papers or make addresses before these societies. Thus you will be able to assist in "organizing component societies and increasing the zeal of their members," as are the directions from the state association to its council. It has long since become a maxim that in union there is strength; that individual effort avails but little in any great movement. But how are we to accomplish this union of strength, this union for greatest influence, this union for greatest good to the medical profession and the people in general? A movement has already been begun and is spreading from county to county and from state to state. The great American Medical Association has already formulated a plan that is being adopted by the several state societies; and it is the furthering of this idea, together with the consideration of a revision of our own academy constitution that is the special subject for this evening. No one in medicine is too good, or too great, or too busy; too old or too young, or too little or too big, or too lazy to be allowed to escape duty in the future. On your program will be seen that a few only of the many features of organization are to be considered this evening. Any one of them could easily take an entire evening, but our object is to have some of the essentials lightly touched on, for a few minutes each, hoping that the opinions of the speakers may assist in awakening interest in society work and in obtaining promises from all present to lend a helping hand in organization.

Medical Organization.

DR. CHARLES A. L. REED called attention to the condition of medical organization in the United States at the time of his election to the presidency of the American Medical Association in 1900. Aside from the national body there were then local, county, district and state societies, the district societies in many instances embracing areas that varied in extent from several counties to several states. The membership in one of these bodies was frequently made up to an important degree of the members of some other organization within the same territorial limits. This circumstance was of no importance so long as the respective local bodies devoted themselves to social and scientific proceedings, but it became a matter of very great importance when it came to the question of pro-rata representation for legislative purposes in both the various state societies and in the American Medical Association. Thus it not infrequently happened that the profession, in certain parts

of the country, duplicated its representation in the various delegate bodies, while it utterly failed to secure concert of action in important matters pending before various state legislatures, or for that matter before Congress.

This state of affairs had become peculiarly embarrassing to the American Medical Association. This body, organized on the delegate plan in 1847, as an unincorporated and purely voluntary organization, at first, and for several years received the delegates from practically every possible source, including the public services, medical societies, medical colleges, hospitals and lunatic asylums. This wide-open policy was soon found to be impracticable, and there was a gradual restriction of the right to send delegates, until, finally, no professional bodies except affiliated medical societies were granted the right of representation. There was but very little restriction, furthermore, in granting affiliation to medical societies. Many of the district societies, especially multi-state societies, had been very properly cut out, the only condition imposed on the remaining societies being that prescribed by the resolution of 1855. This resolution provided that no medical body should be recognized as an affiliated body that had not previously adopted the Code of Ethics of the American Medical Association. It subsequently appeared without further recorded action as Article IX of the old constitution, and was at the time of its adoption aimed at the Ohio State Medical Association.

Dr. Reed then discussed the code question very fully, mentioned the action taken in 1855, when a resolution was adopted, requiring all affiliated societies to adopt the code, and the rescinding of this action at St. Paul in 1901 by omitting this requirement in the new constitution and by-laws, etc.

The Importance of County Medical Societies.

DR. HORACE BONNER urged that, of medical societies, the most important is the county society. "Leaving out of account its importance as a unit in the scheme of organization, still it is the most important medical society in the land. It is accessible to the whole profession, even to the humblest member. All can share its advantages and it is, for the large majority, the only society. It is their post-graduate school and the only one they have, for comparatively few can attend the state societies or the American Medical Association." In county societies men "read and discuss papers, exchange experiences, comment on the lessons these teach, receive and give encouragement and have a short but enjoyable relaxation from the cares and worry of everyday life."

"These societies are good, indifferent or poor, just as the members make them, none is so good that it might not be made much better, none so poor that it is not very much better than no society. Their great weakness is their selfishness. They exist for their own members alone. They do not help their weak neighbors in adjoining counties and they have little or no public influence." The conditions in the state and the conditions in the national organization demand that medical men get together. "Individual effort is vain." "The whole plan is successful or falls to the ground just as we succeed in making the county society efficient." In its discussion is initiated. From it go the instructed delegates to the state association, and from the state association, likewise, the representatives are chosen to the American Medical Association.

The consummation of the desired organization will be complete and will be ideal only when the county societies "include every reputable and legally qualified physician in each county who does not practice or claim to practice sectarian medicine." "The county society is supreme." Membership in it establishes standing as a physician. "I don't care what the code of the American Medical Association may say, the code of the profession is going to be that 'a physician must be, in all things, a gentleman according to the standards of society and, therefore, one who is honest in his dealings with his patients and with his fellows.'"

"I am glad the word 'regular' does not occur in the constitution or by-laws of either the state or county. Hereafter we shall be 'physicians.'"

Medical Ethics.

DR. P. S. CONNOR stated that medical men may be classified under three heads: Those who need no code of ethics, those who

will obey no code of ethics, and those who can be influenced toward the right by the code of ethics. The latter class constitutes no small number. The only objection to doing away with the code of ethics is that it opens the door to those who will confine themselves to one dogma or one line of medicine. There is not the slightest difficulty in the code being carried out as far as we are concerned. If there were no sectarian doctrines preached and no effort made to get business through the influence that we attach to sectarianism of one sort or another, we would need no code of ethics.

Medical Legislation.

DR. N. P. DANDRIDGE stated that there are three distinct sets of organizations which are becoming more and more powerful by means of association: namely, medical societies; second, medical colleges, which have existed longer than state societies and only recently have come into anything like a combined body; and third, the boards of state examiners. While these three bodies should, as far as possible, work together, yet in many lines they are antagonistic, and in order to do their work properly they must be antagonistic. Yet he thought that the tendency of state boards was to become yearly more and more arbitrary in their decisions, and that many facts of importance to the medical colleges and to the profession at large were kept secret for a longer time than was consistent with progress or good judgment. He also thought that the requirements of a candidate for a medical profession or a legal career or any other profession should be under the supervision of one board, as it is now in the state of New York. On the whole, he thought that attempts at medical legislation, at least as far as Ohio was concerned, had resulted in unmixed good, and no one, he thought, not even those connected with medical colleges, who were the greatest sufferers, would be willing to return to the days of chaos previous to medical registration and later of state board examination. As far as the personnel of the Ohio State Board was concerned, he thought that the selection had been most happy; certainly the members of the board who were not of the regular profession, so-called, had contributed in no small measure to the enactment and carrying out of many of the most important measures inaugurated by the board.

Social Needs of the Physician.

DR. E. W. MITCHELL thought that the physician should labor less hours and so have more time to mingle with his fellows and thus get out of the morbid rut into which his profession is apt to throw him. To do this the fees of the physician need to be radically increased, as he is now working in the large majority of cases for far less than he ought to receive. One of the chief inducements for Dr. Mitchell to attend the local medical society, he said—only less in importance than the professional aspect—was the social time that he was able to enjoy with his brother physicians. This was also true in attendance at the larger meetings held at a distance.

The Doctor in Politics.

DR. LOUIS SCHWAB stated that medical men organized in the past for mutual improvement alone—to exchange experiences with one another. The medical society in the past has been the admiration of the public because there has never been in it a breath of either religion or politics. But the physician is a citizen and even he can raise his voice for what he feels will be for the good of the people. He will always be granted a hearing and with a respectfulness that is given only to one of honest intention. Of late years many a medical man has devoted time to public affairs. When he is "chosen to public office he feels that he is not only responsible to the people, but that he is answerable to his craft for all his acts." Medical men can be found in Congress, in state offices, occasionally in the governor's chair and in prominent positions of many kinds without in the least detracting from or interfering with their reputation as physicians. Public service will demonstrate to many a physician the contracted life he was living and make him a more able man to practice his profession. "If the doctor in politics will practice the same self-denial that he does in his profession, public faith in him will be

as strong and tender as that which he is made to feel at every bedside which he visits."

Commercialism in Medicine.

DR. THAD. A. REAMY was very much inclined to defend the young physician who attended cases for a lower fee than his older competitor, though he saw no reason why a young physician should not charge the same as an older one for the same service, provided that the young physician had, by virtue of his previous training and experience, obtained a good and recognized standing in his profession. Dr. Reamy was emphatic in his condemnation of division of fees.

Fees, Bills, Collections and Dead Beats.

DR. MAGNUS A. TATE spoke from an experience of twenty-four years with fees and collections, twelve years in the practice of medicine and twelve as a boy and young man, collecting for his father. Many a physician who has means outside his practice fails altogether to grasp the problem of collections or to sympathize with the importance of this point to the physician as a class. "As a boy I became impressed with the following: Gratitude existed only in those who paid their bills and the one who penned the following had some experience:

The danger o'er, the patient is delighted,
God is forgotten and the doctor is slighted.

From his experience Dr. Tate has found the following points of value: "Charge reasonable fees, smaller to the poor, but never overcharge the rich." The physician needs the influence of the well-to-do. He must be fair and honest with them, and they will return it with interest. "Surgical operations and obstetric fees are entirely governed by the character of the case and the ability of the patient to pay." The sum charged by the general practitioner in obstetric cases is ludicrous.

It is the most poorly paid of all work in the practice of medicine. Dr. Tate can see no remedy for this evil at the present. He usually makes a charge for telephone advice. If he finds a crank who objects to paying for simple advice where no medicine is given, he adds medicine. Charges should be increased for night calls, contagious cases, Sunday calls and first visits. The contract doctors are governed by but one object, which is "self." Watch them through life and see if this diagnosis is not correct. They are making medical paupers out of thousands and doing irreparable harm. It is no wonder that insurance companies have inaugurated their liberal method of dealing with physicians on what they term business methods. Dr. Tate gave some examples of this abuse.

Members of the profession are seriously at fault in not telling the truth as to their revenue. "It is a sad commentary on the practice of medicine and truth to hear of the marvelous sum that Dr. So-and-So is making a year, and you know otherwise." This practice does two things: "1. It makes many a young man or woman enter the profession who is in no way fitted to enter, and 2, it keeps the impression alive that physicians are rich and do not need any money and consequently leads to great difficulty in the collection of our accounts."

Concerning collections, Dr. Tate urged that the medical profession shows a serious lack of business principle. Many a physician tells his patient that there is no hurry about payment. Many a physician has not the courage to ask what is his just dues. When a bill has waited six months, perhaps the patient is dead, perhaps he has removed and you can not find him, or perhaps he has gone to another physician because he owes you, which gives the impression that he was dissatisfied with you, perhaps he has forgotten just what you did for him and refuses to pay it in whole or in part. Dr. Tate's practice has been to send out bills the first of the month following services rendered, for the following reasons: 1. If there is any misunderstanding, memory is fresh and can straighten out the difficulty. 2. The patient's address is probably known. 3. The patient has not lost all the gratitude born in him while he was sick.

Dr. Tate urges the prosecution of dead beats, but he wishes to insist that there is a distinct line to be drawn between the dead beat and the poor man or woman who can not pay. "Charity is the sweetest morsel that one can taste; its flavor is delicious when it is given to the unfortunate and needy."

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Menstrual Pains in Virgins.

Dr. Touvenaint, in *Klin. Ther. Woch.*, recommends that hot applications be applied to the abdomen to relieve the pains and produce rest. If the pains are very violent an enema containing fifteen minims of tincture of opium or fifteen to forty-five grains (1-3.) of chloral hydrate should be administered. The following combination may be used as a substitute for one of the foregoing:

R. Tinct. opii	gtt. x	65
Pulv. camphoræ	gr. iii	20
Yolk of 1 egg.		
Aq. destil.	℥iv	120
M. Sig.: As an enema; or:		
R. Ext. cannabis.		
Ext. belladonnæ, āā	gr. i	06
Ol. theobrom. q. s.		
M. Fiat suppos. No. i.	Sig.: Two or three daily.	

Bronchitis Complicating Diseases of the Heart, Lungs and Kidneys.

The treatment of this form of bronchitis, according to I. N. Danforth, in *Textbook of Applied Ther.*, should begin with the treatment of the condition that precedes and causes it. Elderly individuals, however, are improved by the administration of potassium iodide. The following formula is recommended by the author:

R. Pot. iodidi	℥iiss	10
Syr. picis liq.	℥iv	15
Syr. pulveris doveri	℥i	30
Syr. lolutani, q. s. ad.	℥iv	120
M. Sig.: One teaspoonful four times a day.		

Stimulating expectorants are rarely needed in this form of bronchitis, but the author recommends small doses of aromatic balsams combined with a mild anodyne if the cough is troublesome, as follows:

R. Terebinthinæ canad.		
Pulv. ipecac. et opii, āā	℥i	4
Pulv. acaciæ q. s.		
M. Ft. capsulæ No. xx. Sig.: One every three or four hours; or:		
R. Copaibæ		
Camph. monobrom., āā	℥i	4
Pulv. acaciæ q. s.		
M. Fiant cap. No. xx. Sig.: One three or four times a day; or:		
R. Olei santali	℥ii	8
Tinct. opii camph.	℥i	30
Sacchari albi		
Acaciæ, āā, q. s.		
Aq. anisi q. s. ad.	℥iv	120
M. Fiat emulsio. Sig.: One teaspoonful three or four times a day.		

Technic of Hypodermoclysis.

Jos. Byrne, in *Merck's Archives*, recommends, in the administration of normal saline solution, that after preparing the patient, the fountain syringe be filled with the solution at a temperature of 102 F. to 105 F., to which a coarse but finely-pointed needle be attached and the syringe suspended six or eight feet above the patient. The physician, after thoroughly sterilizing his hands, should hold the needle and allow the flow to start before introducing it, in order to remove the air and cold fluid from the tube. With the other hand a fold of the skin in the axilla or over the abdomen should be grasped between the thumb and the finger and elevated similarly to the methods employed in giving an ordinary hypodermic injection. The needle should be pushed into the subcutaneous tissue, getting well beneath the skin, but not penetrating the muscular tissue beneath. The needle then can be freely moved about under the skin when the clamp may be loosened and the solution allowed to flow. Six to eight ounces will be all that

can be injected at one point; the needle may be removed and an injection made at another point. This may be repeated until the requisite amount is injected, which may range from one to three pints. If pain occurs during the operation gentle massage may be given to facilitate absorption. The addition of small quantities of glycerin or carbolic acid is said to relieve pain, yet the author does not advise their use. With thorough aseptic procedures no dangers should arise from this procedure.

Administration of Creosote Carbonate.

In order to overcome the difficulty encountered by some patients in taking creosote, J. J. Stoll of Chicago recommends that it be prescribed in the form of an emulsion, as follows:

R. Creosoti carb.	3ii	8
Ext. malti	3iv	15
Glycerini q. s. ad.....	3iii	90

M. Fiat emulsio. Sig.: One teaspoonful after each meal.

Acute Pelvic Inflammation.

E. C. Hill, in *Med. Standard*, recommends in the treatment of acute pelvic inflammations, from whatever cause, that the patient be placed in a comfortable posture; sometimes elevating the foot of the bed gives great relief. The administration of morphin or opium in sufficient doses, which may be given per rectum; absorbent cotton saturated with equal parts of tincture of belladonna and glycerin applied hot and covered with a rubber cloth. Ten or fifteen grains of quinin should be given on the first days of the disease.

A small amount of cold water may be given frequently to relieve the thirst. If the lower bowel is loaded, employ a rectal injection composed of the following:

R. Magnes. sulph.	3iii	90
Glycerin		
Aquæ, aa	3ii	60

M. Sig.: As an enema, to be repeated as necessary.

Sodium phosphato, dram one-half (2.00) then should be given and repeated every three or four hours.

When the acute symptoms have subsided and there is no evidence of pus or serum, small blisters should be applied repeatedly to the iliac regions (one on each side) or paint the roof of the pelvis with tincture of iodine, or keep up counter irritation with the following solution:

R. Olei tiglii	3i	4
Etheris sulphurici	3ii	8
Tinct. iodi	3iii	12

M. Sig.: Paint over the lower abdomen and repeat when the eruption disappears. Nourishing food, quinin, ferri iodid, potassium iodid, ferric chlorid and other tonics may be prescribed. Avoid exercise which excites pain. Promote absorption and lessen adhesions by pelvic massage.

Menthol for Local Application.

The following combination, containing menthol, is recommended by Kuehl in *West. Druggist*, for local application as a liniment:

R. Menthol	gr. xv	1
Spts. chloroformi	3i	4
Spts. camphoræ	3iiss	10
Spts. saponis	3i	30
Olei gaultheriæ	3ss	2

M. Sig.: Apply locally.

Putting Drops Into the Eye.

Sharp, according to an abstract in the *Ind. Med., Jour.*, gives the following suggestions and directions for dropping solutions into the eye: Never apply the drops directly to the cornea, nor should the dropper be brought down in front of the eye as the patient will close the eye reflexly. The dropper should be brought from below upward and to the outer canthus. Have the patient turn the eye upward and at the same time gently evert the lower lid, and while it is in that position place one or two drops on the conjunctiva of the everted lid. Not more than two drops should be put in at one time as the sac is not capable of handling more. The patient should then be directed to look down, at the same time holding the lower lid until the upper one comes in contact with it. In this way none of the solution will drop down on the cheek. Care should be taken

that the dropper does not touch the eye anywhere as it may infect the eye or in turn become infected by the eye and will infect the medicine when replaced. It is well to boil the dropper before using it.

Chordee.

The following outline of treatment is recommended by Bjorkman in *Merck's Archives* in the treatment of chordee. Cold applications should be applied to the perineum or to the penis itself or hot sitz baths or leeches applied to the perineum. Keep the patient in bed on a light diet and keep the bowels well open. If abscess formation takes place a free external incision should be made in order to prevent urethral fistula.

The following internal treatment is recommended by the author:

R. Lupulini	gr. xv	1
Camphoræ	gr. iiss	15

M. Ft. pil. No. x. Sig.: One pill every hour until the effects are produced; or:

R. Camph. monobrom.	gr. xviii	120
Ext. hyoscyami		
Opii depurati, aa	gr. ix	60
Ext. lupulini q. s.		

M. Ft. pil. No. xv. Sig.: One pill four times a day; or:

R. Ext. opii	gr. i	6
Ext. hyoscyami	gr. ii	12
Lupulini	gr. ix	60
Ol. theobrom.		

M. Ft. suppos. No. vi. Sig.: One to be inserted into the rectum two or three times a day; or:

R. Chloralis hyd.		
Potass. brom., aa	3iiss	6
Syr. aurantii	3vi	24
Aq. destil. q. s. ad.....	3iii	90

M. Sig.: Two tablespoonfuls at bedtime for the nervousness and insomnia.

As an ointment to be applied locally the following is recommended:

R. Ext. hyoscyami	gr. xv	1
Lanolini	3ii	8
Vasellini	gr. xxx	2

M. Fiat unguentum. Sig.: To be applied locally.

Medicolegal.

Demonstration of Extent of Incapacity from Injuries.—In the personal injury case of Clark vs. the Brooklyn Heights Railroad Company, the party suing was permitted, for the purpose of showing the extent of his injuries, to attempt, in the presence of the jury, to drink a glass of water and to write his name. The Second Appellate Division of Supreme Court of New York holds that there was no error in permitting these demonstrations of the alleged inability, but that such evidence was admissible within the fair discretion of the trial court. It says that the injured person could certainly be allowed to testify that since the injury he had not been able to write without experiencing a tremor of the hand, or to drink a glass of water without similar inconvenience. No good reason is perceived why he may not be allowed to illustrate the extent of this incapacity as well as to state it in words. Deception, of course, is possible in such an illustration, but it is equally possible in the oral statement. In either case, the jury are to judge of the credibility of the witness.

Physician May Testify as to Competency of Nurse.—The First Appellate Division of the Supreme Court of New York holds, in Ward vs. St. Vincent's Hospital of the City of New York, that a physician who has had daily opportunity of observing the work done by a nurse—who has seen how she has done it—is qualified to say whether, in his opinion, she was a skilful and competent nurse. It says that the necessity for opinion evidence arises whenever it is impossible to state to the jury all of the facts which are essential to enable it to form an accurate judgment. Whether or not one be a skilful and competent nurse necessarily depends on many facts, all of which, from the very nature of things, it is impossible to lay before a jury, and for that reason a physi-

cian who has the personal charge of a patient, and who daily sees the manner in which a nurse performs her work over that patient, is competent to express an opinion. Furthermore, while it holds that it was for the jury to say whether, on the facts presented, one of the sisters of charity in charge of a charitable institution acted within the scope of her authority in making an alleged contract to furnish the services of a skilled and experienced nurse to the party suing while she was undergoing a surgical operation and recovering therefrom in such institution, the court holds that it was error to refuse an instruction that if the jury found, as a fact, that the party received no more than the personal assurance of the sister, then there was no contract on behalf of the institution.

What Constitutes Total and Permanent Disability.—In the case of *Monahan vs. the Supreme Lodge of the Order of Columbian Knights* one of the questions was the construction to be put on a by-law, which provided that whenever a member in good standing became "totally and permanently disabled, by reason of accident or disease, from following any occupation whatever," he might be paid a certain sum of money out of the funds of the order. The Supreme Court of Minnesota holds that, in order to recover under this section, it is not necessary that a member shall be disabled to the extent that he has not sufficient physical power to follow some easy occupation, and to perform some slight service, although under great disadvantage and while suffering great bodily pain. It says that, on the subject of proper construction, it will not undertake to improve on the apt language of the trial judge that "the words 'following any occupation' mean something more than the doing of one or more acts pertaining thereto. They involve the idea of continuity, and involve, also, the doing of all those things which are an essential part of the work or business in which a party is engaged." The language must have a practical and rational construction. It is difficult to conceive of a case where a man would be so completely disabled as to prevent his engaging in any kind of occupation. The party suing was shown to be substantially unable "to follow any occupation, because he was not able to do all of the essential acts necessary to be done in the prosecution of an occupation."

Marriage May Be Annulled for Venereal Disease.—In the case of *Svenson vs. Svenson* the Second Appellate Division of the Supreme Court of New York approaches as an entirely new question in that state the one of whether a marriage may be annulled for the fraudulent concealment by one of the contracting parties of the existence at the time of the marriage of a chronic and contagious venereal disease. It pronounces an unquestionably sound proposition, the general one that ill health, although concealed, or even although the condition has been misrepresented, will not of itself justify annulment. In the absence of binding and explicit authority, however, it says that it would be unwilling to assert a doctrine which would require a court of equity to hold that a man who finds a woman whom he has innocently married afflicted with venereal disease, and who, therefore, refuses to consummate the contract, may not procure a decree annulling the marriage because of the fraud involved in the existence of the condition and its concealment. Such a condition would seem to be amply sufficient to justify a finding that the afflicted party was physically incapable at the time of meeting the obligations of the relation. The reasoning which refuses relief in the case of ordinary ill health has no application to a disease which involves disgrace in the contraction, contagion in marital association, probably injury to offspring, and which, from its secret and shameful nature, denies to the innocent and unsuspecting the protection of foreknowledge. But in all cases of this character it is of the first importance that the application for judicial relief should be of absolute good faith and free from the suspicion of collusion.

Opinion of Attending Physician Evidence as to Injury.—The Supreme Court of Minnesota holds, in the personal injury case of *Skelton vs. the St. Paul City Railway Company*, that it is proper to allow a physician to give the result of information derived by him in the treatment of a patient,

when being examined as an expert. In this case a physician, who was attending the party suing during her illness, was permitted to state, in describing her symptoms, that she had suffered from headaches. The record showed that such knowledge was derived from information received from the party during the course of professional treatment, which was obviously necessary to enable the medical attendant to prescribe for his patient. The same physician also testified as to the probable continuance of her malady, and expressed his opinion on the question whether her injured limb would ever regain its normal condition. This was after he had given a somewhat extended clinical history of her treatment, and was based on the information he had derived during the course of his professional attendance. The Supreme Court holds that this was proper. The opinions of a professional expert in such matters, it says, are not required to be based on hypothetical questions embodying a description of the physical condition of a person, but may be formed on knowledge of the injuries derived at the bedside, or from evidence in court. Quite like this is the decision of the Supreme Court of South Carolina in the personal injury case of *Oliver vs. the Columbia, Newberry & Laurens Railroad Company*. It says that the medical expert makes his diagnosis of an ailment from the symptoms discovered by his skill and from other symptoms gathered from the statements as to her present condition made to him by the patient while under examination. From these symptoms, thus discovered, he determines what "is the matter" with his patient, and the jury may have this conclusion expressed to them as the opinion of an expert witness. Besides this, the court holds that, in a personal injury case, testimony of the amount paid for medical attention is admissible for the purpose of throwing light on the extent of the injuries, just as testimony as to the length of time the patient was confined to her bed would be.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

February 14.

- 1 *Differential Diagnosis of Certain Diseases of the Liver. Charles G. Stockton.
- 2 *The Significance of the Presence of Streptococci in Market Milk. Raymond C. Reed and Archibald R. Ward.
- 3 *Tuberculosis of the Bronchial Glands; Tuberculin; Chest Pain. G. W. McCaskey.
- 4 *The Nervous Cardiac Symptoms Due to High Altitudes. F. Savary Pearce.
- 5 *Report of 250 Additional Cases in which Nitrous Oxid Was Used Alone or as Preliminary to Ether or Chloroform Anesthesia. David H. Galloway.
- 6 *Care of the Eyes of School Children. Linn Emerson.
- 7 Vital Statistics: A Plea for Actuarial Administration and Control of the Great Resources of Preventive Medicine. (Continued.) John S. Fulton.

1. **Liver Diseases.**—Stockton states that in this paper he does not attempt to treat the differential diagnosis thoroughly, but to point out certain distinctive characteristics in the familiar diseases of the liver, commencing with ordinary hepatic cirrhosis and so-called syphilitic cirrhosis. He finds this sometimes difficult, but remarks that in the syphilitic form the liver is large, frequently bosselated and of irregular contour and is sometimes accompanied by a friction rub. A history of syphilis and the therapeutic test are important points in the diagnosis. An apparent cure will occur in a large proportion of cases with syphilis. Sometimes the disease is too far advanced for such results and in others there may be a relapse. The diagnostic points between cholelithiasis and cancer of the liver are also discussed. He remarks that when cancer affects the liver it is usually secondary, and some information may be gained by locating the primary growth. There is a lack of history of characteristic hepatic colic unless cholelithiasis also exists. The presence of jaundice, with enlargement of the gall bladder, suggests cancer, while the history of gallstone and the gall bladder not palpable, indicates stone in the common duct. This is practically Courvoisier's law. Other points are also noted. Abscess of the liver may be confused with cholecystitis and angiocholitis. The history of the

case should be of assistance, and frequently when we suspect abscess puncture may be resorted to. He has seen no bad effects from puncture, though it may be difficult to find a small abscess. Lastly he considers sclerosis of the liver following chronic biliary obstruction and the so-called Hanot's cirrhosis of the liver, which he holds is a disease *sui generis*, usually seen in the young, without alcoholism, often acute in the beginning, though the disease is usually protracted. In the onset there is pain, often severe in the region of the liver, and probably a temporary elevation of temperature. The patient is found to be moderately jaundiced. The liver is very large, as is also the spleen, and pigmentation of the skin may be present over and beyond that occasioned by jaundice. The pain may be intermittent and the patient may often be for months exempt from all symptoms. Eventually, though perhaps not for five or ten years, jaundice appears, temperature rises and the patient dies from icterus gravis.

2. **Streptococci in Milk.**—The importance of streptococci in milk is insisted on by Reed and Ward, who find that infectious mammitis in the cow may have no specific symptoms. They remark, in conclusion, that the classification of streptococci is still in an unsettled state. The common prevalence of mammitis in the cow constitutes an important source of streptococci in market milk. The insidious onset of the disease is responsible for this being often innocently sold, and the common method of milk handling in stables deserves mention. The milk, after drawing, is generally poured in a common receptacle with other milk, and if the existence of udder inflammation is shown by curd-like masses on the sides of the strainer, ignorance or greed may prevent the proper rejection of the infected milk. The presence of streptococci must be regarded as a matter of danger. To understand the conditions under which these streptococci harbored in the healthy udder may become virulent will require a further study of the pathology of mammitis.

3. **Tuberculosis.**—McCaskey's article is largely on the diagnostic and therapeutic use of tuberculin. He believes in both. He also points out the diagnostic value of superficial chest pain, and gives schematic illustrations showing the reflex routes by which it may occur.

4. **Altitude in Heart Disease.**—Pearce discusses the effects of increase of altitude on the nervous cardiac symptoms. Ordinarily up to 5,000 feet or more no disturbance is caused in the normal heart. As we go up higher, however, there is a decided disturbance. In functional nervous disease he would advise against stimulating climates and altitudes over 2,000 feet as well as enervating climates at the lower levels. The matter of dryness of climate has something to do with the effect, and may be considered favorable.

5. **Nitrous Oxid Anesthesia.**—Galloway gives the results of 250 different cases where nitrous oxid was used either alone or as a preliminary to ether anesthesia. He considers that while there is no ideal anesthetic this comes as near to it as any. It does not terrify the patient as do ether or chloroform, produces no distressing symptoms and is so rapid that there is little time for the patient to become frightened. Less anesthetic is used, and, therefore, recovery takes place quicker, and the after-effects are correspondingly less.

6. **The Eyes of School Children.**—After noting the possible troubles from neglect of the condition of the eyes in school children, Emerson suggests examination to ascertain the following facts in each individual pupil:

1. Does the child fail to read a majority of the letters on the XX (20) line of the Snellen test types with either eye?
2. Do the eyes and head habitually grow weary and painful after study?
3. Are the lids or eyes habitually inflamed?
4. Is the child cross-eyed, or do the eyes diverge?

On an affirmative answer to any of these questions a letter of warning should be sent to the parents.

Boston Medical and Surgical Journal.

February 12.

- 8 *Irrigation in Acute Urethritis. Arthur L. Chute.
- 9 *A Report of a Case of Multiple Neuritis of Questionable Origin. Arthur W. Marsh. With Remarks by George C. Smith.
- 10 *Subdural Cervical Carcinoma, Secondary to Carcinoma of the Breast. E. W. Taylor and G. A. Waterman.

11. A Case of Pneumonia, with Relapse. A. Lawrence Mason.
- 12 *A Form of Pressure Anemia of the Uvula Which May be Mistaken for Membrane. W. P. Coues.
- 13 *Antisepsis of the Clinical Thermometer. William H. Devine.

8. **Irrigation in Acute Urethritis.**—Chute advocates the use of irrigation in this condition, holding that while it is at times and in occasional instances disappointing, it gives in acute urethritis the best individual and general results. It also offers the patient the greatest immediate comfort and safety, and as prompt if not more prompt recovery takes place than when other means are employed. Recovery is also more certain and the probability of latent complications diminished.

9. **Multiple Neuritis.**—Marsh details a case in a woman aged 52 and considers the cause to have been tubercular. The paper ends with some remarks by Dr. George C. Smith, who also analyzes the symptoms, finding the balance of argument in favor of the tubercular origin.

10. **Subdural Cervical Carcinoma.**—Taylor and Waterman report a case with microscopic examination of the tumor. The special points of importance to which they call attention are the growth of long standing in the immediate neighborhood, with slight involvement of the cord, limitation of the new growth essentially to the subdural space, extensive motor and sensory paralysis from involvement of the nerve-roots alone, and absence of pain attributable to invasion of sensory roots.

12. **Pressure Anemia of the Uvula.**—Coues calls attention to a condition which he has observed several times, consisting in a white spot seen on separating the tonsils from the uvula, which, on careful examination, is seen to be exactly at the point of impaction of tonsil and uvula; is not raised above the surface and does not bleed when touched. He thinks it occurs in streptococcus infection of the throat, when a non-diphtheritic membrane is perfectly possible.

13. **Antisepsis of the Clinical Thermometer.**—This subject is, according to Devine, too much neglected in text-books. The importance of cleaning the instrument is perhaps considered sufficiently evident. He thinks the best method to keep it free from germs is to keep it in an antiseptic solution when not in use and that no one should ever use a thermometer to take the temperature in the mouth or rectum without being absolutely certain of its being perfectly sterile. The best methods for eliminating transmission of disease, he thinks, are: 1. Separate instrument for each patient. 2. The hospital method of keeping the thermometer immersed in antiseptic solution, when not in use, and 3, keeping in the thermometer case a solution of bichlorid and alcohol (1-5000 to 1-2000).

Medical Record, New York.

February 14.

- 14 *A Résumé of Some Recent Researches Relating to Cytolysis and Immunity. T. Mitchell Prudden.
- 15 *The Problem of Epilepsy: Some Suggestions for Its Solution. L. Pierce Clark and Thomas P. Prout.
- 16 *The Radical Cure of Inguinal Hernia with Local Anesthesia. J. A. Bodine.

14. **Immunity.**—Prudden's paper is a review of theories and facts relating to cytolysis and immunity that does not lend itself to abstracting. He holds there is abundant ground for the belief that the protective agents invoked in natural and artificial immunization are simply those made use of by the body in its normal metabolism, exaggerated and diverted to different ends, in the face of emergencies, but involving no new physiologic capacities.

15. **Epilepsy.**—Clark and Prout consider epilepsy as due to a toxemia involving particularly the cervical cortex, and they summarize that "epilepsy is a disease resulting in diffuse and profound cortical degeneration; a highly complex sensory motor phenomenon, primarily sensory with a motor expression. The lesions are swollen nucleus, destruction of the nuclear membrane and intranuclear network, easy abstraction of the nucleolus by the knife, diffuse chromatolysis and other protoplasmic changes in the cell tending to its ultimate disappearance as a biologic unit and its replacement by a gliosis. The lesions are induced by a toxic or autotoxic agent operating on an organic anomaly of the cerebral cortex which forms the predisposition."

16—See abstract in THE JOURNAL, XXXIX, p. 1204.

Medical News, New York.

February 14.

- 17 *A Study of a Bacillus Resembling the Bacillus of Shiga, from a Case of Fatal Diarrhea in a Child; with Remarks on the Recognition of Dysentery, Typhoid and Allied Bacilli. Philip Hanson Hiss, Jr., and P. P. Russell.
- 18 *Post-Diphtheritic Ocular Paralysis. P. N. K. Schwenk.
- 19 *Post-Diphtheritic Paralysis Affecting the General Nervous System. Luther C. Peter.
- 20 *Post-Diphtheritic Paralysis Affecting the Ear and Throat. Carle L. Felt.
- 21 *Laboratory Aids in the Diagnosis of Typhoid Fever. E. E. Smith.
- 22 *The Influence of Sodium Chlorid upon Gastric Secretion. Lyman B. Stookey.

17. *Bacillus X*.—Hiss and Russell have isolated an organism from the feces of a case of fatal diarrhea in an infant which has a close resemblance to the bacillus of Shiga, but presents certain differences. It agglutinates in high dilutions with the serum from dysentery patients and animals immunized with Shiga bacilli. Formerly it could not have been differentiated by valid culture tests from the bacillus of Shiga, and, the mannite test being unknown, might easily have been confounded with Shiga's micro-organism unless its agglutinating reactions had been carefully studied in such a serum as that from typhoid immune animals, or from the normal beef, in neither of which the true Shiga bacillus, according to their tests, agglutinates in appreciable dilutions. It is also closely related to the *Bacillus typhosus*, both in agglutinating reactions and in the usually-observed cultural characters, but can be separated from it by the absence of motility and by its reactions in the maltose and dextrin media employed. It apparently differs from all hitherto described dysentery-like or pseudo-dysentery bacilli in its agglutination in high dilutions of dysentery serum, an agglutination in some instances more marked than that shown by the true Shiga bacillus. Its etiologic significance is not fully determined, but its close physiologic connection with the dysentery bacillus on one side and typhoid on the other, make it not improbable that further research will show it to be associated etiologically with certain diarrheic or dysenteric attacks. They recognize three groups of organisms, one represented by the true Shiga bacillus fermenting dextrose and some other monosaccharids, one by the organism *X*, fermenting dextrose (monosaccharids) and the alcohol mannite, and finally a group represented by the more active fermenters—Flexner's Manila cultures and the culture "Baltimore"—organisms which split dextrose, mannite, maltose, dextrin and saccharose with the production of acid, as indicated by the reddening and coagulation of the serum-water sugar media. Their study, they hold, shows the inadvisability of relying on superficial characters or agglutination tests alone in the identification of an organism, or on the serum tests in the determination of the special character of a disease. They suggest that organisms differing from the true Shiga bacillus have been isolated and confounded with this organism.

18. *Post-Diphtheritic Ocular Paralysis*.—This condition is described by Schwenk, who holds that the generally active pupils, the frequency of paresis rather than paralysis and the bilateral character of the lesions can not be accounted for on any other theory than the peripheral one in these affections.

19. *Post-Diphtheritic Paralysis Affecting the General Nervous System*.—Peter considers this condition a toxemia which may affect the nerves generally or confine itself more or less to special nerves. Cardiac failure in diphtheria, he thinks, is possibly due to functional disorders of the vagi, and perhaps organic changes in the nerve structure. He believes in the use of antitoxin as one of the best measures, with rest, which is absolutely imperative, both during and after the attack. Massage and galvanism may help, and iron and strychnia be of some value.

20. *Post-Diphtheritic Paralysis of the Ear and Throat*.—Felt describes the symptoms of these conditions, which are generally curable. The use of antitoxin as now generally conceded, prevents and does not cause diphtheritic paralysis. The ideal way is to use it early, with rest in bed and a simple diet; these, with attention to the excretions, compose the fundamental principles of treatment. Strychnin should be admin-

istered throughout the course of the disease, while electricity, tonics, baths and massage are valuable adjuvants.

21. *Value of Laboratory Methods in Typhoid*.—Smith does not consider that the laboratory affords aid that is certain for all time and in all cases, but it does aid the clinician in the diagnosis of characteristic morbid products, identification of organisms and of the agglutinins. The diazo test he does not consider as valuable as some have claimed, but it is well worth observing. There are some inconveniences in isolating the organism from the blood or rose spots, but this method is worthy of more general attention than it receives. A positive Widal reaction is of great value; the embarrassment is in the negative one. In conclusion he calls attention to the value of the laboratory in establishing the diagnosis of other conditions where typhoid is suspected, such as the malarial parasites in the blood, the blood characteristics of pneumonia, the organism of tuberculosis and the condition of the blood cells in certain forms of intoxication.

22. *Sodium Chlorid*.—From experiments carried out on himself, Stookey concludes:

1. Excessive quantities of NaCl apparently exert an inhibitory influence on HCl secretion and thereby may impede gastric digestion. (This is in harmony with Miller's observations.)

2. The ingested NaCl is apparently not directly converted into HCl in the stomach to the extent—if at all—which one might theoretically expect, assuming the theories of Koeppel and Brasch to be tenable.

Philadelphia Medical Journal.

February 14.

- 23 *Immunization from Tuberculosis. Simon Flexner.
- 24 *Tropical Diseases. Charles F. Kieffer.
- 25 A Physician's Holiday in Vichy. James Tyson.
- 26 *Remarks on the Treatment of Pneumonia. Frederick P. Henry.
- 27 The Roentgen Treatment of Malignant Disease. Charles L. Leonard.
- 28 Acute Urethritis. D. A. Sinclair.
- 29 *A Contribution to the Therapeutics of Children. N. G. Price.

23. *Immunization from Tuberculosis*.—The results obtained by Behring, Pearson and Gilliland in the prevention of bovine tuberculosis are first noticed by Flexner, who calls attention to the early work of Trudeau in this country as a pioneer in this particular therapeutic progress. He says it is a matter of congratulation and national pride that the first steps to the later important studies on tuberculosis just mentioned should have been supplied by American investigators, Theobald Smith and Trudeau.

24. *Tropical Diseases*.—Among the diseases described in this fourth lecture by Kieffer is epidemic gangrenous rectitis, which consists in a rapidly-spreading dysenteric process ending in perforation and gangrene and largely fatal, the causes of which are obscure. Hill diarrhea, an acute morning diarrhea with white stools and marked flatulency, is seen only in the acclimated colonists when they remove from the tropical districts to the hills. Lastly he speaks of sprue, which is a disease of the entire tropical world, and, as a rule, but a terminal condition of many devitalizing and depressing factors. Its cardinal symptoms are: 1, sore mouth; 2, flatulency, and 3, diarrhea. Its course is slow and chronic. It may shade off from chronic dysentery, and it is hard to say sometimes where dysentery ends and sprue begins. The treatment consists in an absolute milk diet, increasing the quantity until the patient will take and assimilate a gallon of milk a day. From this point on the milk diet must be continued for four to six weeks and the soft diet very gradually resumed until in the course of months a mixed diet may be again assimilated.

26. *Pneumonia*.—The great majority of cases of pneumonia in the young and robust will recover under any treatment that is not depressing, and no uniform plan can be formulated. After 50 or 60 years it becomes a more serious condition. The principal indications for treatment in pneumonia are: 1. Pain which, when it interferes with the pulmonary function, is injurious and demands relief. In most cases the external application of leeches will suffice; occasionally a small dose of morphin may be needed, but only in the early stages of the disease. If the temperature remains persistently at a high level, measures must be taken to reduce it. Henry finds sponging with tepid or cold water, or ice bags useful. Of drugs he

lessness call for active interference. Alcoholic stimulants are imperatively demanded, he says, especially in cases where the patient has been accustomed to them. Of drugs, the bromids, especially the ammonium salt, paraldehyd, etc., are those which give the greatest benefit in insomnia. In cough and expectoration he finds good effects from oxysulphuret of antimony. It is of decided service in the early stages of pneumonia in doses of 1/32 of a grain every two hours dissolved in water or in equal parts of syrup of acacia and orange flower water. It is not irritating to the gastrointestinal tract nor does it seem to be depressing. The drugs he notices are digitalis, which is too much used as a routine practice, and is injurious when the arterial tension is increased, ammonia, which may be employed in connection with digitalis, and strychnin, which is of decided value. Oxygen inhalations may be palliative, but he has been rather disappointed in their use. Nitroglycerin is successful in relieving venous congestion, but the most valuable of all recent contributions is the use of quinin subcutaneously as suggested by Petzold. The dose for adults is 0.5 of quinin hydrochlorate in 17 parts of water. Henry has used it and found it decidedly valuable, generally prescribing the more soluble hydrochlorosulphate. Lastly, he speaks of hypodermoclysis, which he has found useful in several desperate cases of lobar pneumonia. Venesection may be occasionally useful. He has seen but few cases, however, in which it was indicated.

27. **X-Rays.**—Leonard finds that the alterative and destructive action produces retrograde changes. In large subcutaneous growths of low vitality, such a rapid destruction may take place as to flood the system with toxins and cause a fatal auto-intoxication and septicemia. The bad effects noted by some observers, such as a stimulation of the growth of the tumor, were probably due to this cause or to a real stimulation by too small a dosage. When the proper dosage shall be determined for the various manifestations this agent will probably prove one of the most potent ones. Until then operative treatment will have to precede it and the x-ray treatment deal with the residua that has escaped the knife. As a preliminary method it has no place at present, except where operation is contraindicated or more cosmetic results may be desired, and life is not threatened by delay, or when the disease is already inoperable. It must be employed with as great care as any other agent possessing such marked alterative properties.

29. **Heroin.**—Price has found heroin of special value in the diseases of children such as whooping cough, bronchitis, false croup, epilepsy, urinary incontinence, diarrhea, chorea and asthma. He gives cases to illustrate the antispasmodic, sedative and analgesic effects of the drug in children.

New York Medical Journal.

February 14.

- 30 Rudolf Virchow—An Appreciation. Charles A. L. Reed.
- 31 *Residual Urine. Henry D. Hale.
- 32 *The Etiological Significance of Heberden's Nodes. Edward M. Merrins.
- 33 *On the Local Effects of Aurantia and Its Treatment. W. Moser.
- 34 The Influence of the Mind Upon the Body. John B. Huber.

31. **Residual Urine.**—Hale suggests that in many cases the cause of residual urine may be enlargement of the middle lobe of the prostate behind the internal orifice of the urethra, and that the patient can be relieved if told to void urine twice daily in the knee-elbow posture. He has a patient nearly 82 years old who for the last thirteen months has found this practice of great service. After the bladder wall has lost its tonic, this will be of no avail; it is only in the earlier phases that it is valuable.

32. **Heberden's Nodes.**—Merrins concludes that Heberden's nodes are simply evidences of structural degeneration depending on etiologic factors of wear and tear, rheumatic disease, mechanical, chemical, or toxic irritants in the system, and lowered vitality and disturbed innervation. Their common occurrence in women is due, he suggests, to the larger use of the smaller joints of the fingers in their daily work. These are likely to occur in any condition where these factors mentioned are present and are most prevalent in those chronic diseases where morbid bony changes form the principal feature of the disease, as in gout, and the osteoarthritic variety of rheumatoid

disease. Their presence may help in the diagnosis, but they should never be regarded as conclusive evidence of any particular disease, nor are they of sufficient pathologic importance to constitute a separate form of rheumatoid disease when they appear as an isolated phenomenon.

33. **Aurantia.**—Aurantia is a coal tar dye used in the arts and in color photography. The unpleasant results occurring from handling it were formation of vesicles, swelling, intolerable itching, etc., very similar to those from ivy poisoning. He recommends the formula which he used in the latter condition, consisting of creolin, 2 drams; the fluid extract of grindelia, 1/2 ounce, water 5 ounces, applied on saturated cloths.

Cincinnati Lancet-Clinic.

February 14.

- 35 *Goiter and Its Treatment. P. M. Sater.
- 36 Tuberculosis-Sanitation. H. H. Splers.
- 37 Surgery of the Prostate, Pancreas, Diaphragm and Spleen. (Continued.) B. Merrill Ricketts.

35. **Goiter and Its Treatment.**—The treatment recommended by Sater consists in first washing out the alimentary tract with calomel, with sodium bicarbonate and podophyllin; follow this with a hot salt water bath twice a week (in some cases only as a moral treatment); then begin by treatment with potassium iodid in small doses, usually about 2 1/2 gr. freely diluted, after meals only. The next prescription contains 5 grains to each dose, while the third contains 7 1/2, and for the fourth prescription, unless contraindicated, about 10 grains to each dose, continuing the latter for a few weeks until diminution in size of the gland appears; then is added one ounce of buchu, juniper and acetate of potassium, which later is increased to two ounces, thus making one-half the amount of the medicine buchu, juniper and acetate of potassium. This is continued until the cure is effected, which may be in from 30 to 90 days. An eruption like that of measles may occur, but will only necessitate reduction in the size of the dose. He insists on the importance of diuretics in the treatment, and says that he has had very satisfactory results from this method. This, of course, does not apply to the cystic form, of which he has had but one case.

Virginia Medical Semi-Monthly, Richmond.

January 23.

- 38 *Provision for the Criminal Insane. William F. Drewry.
- 39 Aid of the Microscope in Diagnosis of Diseases of the Skin. C. S. Venable.
- 40 *Remarks upon Some Indications for Wearing Glasses. John P. Davidson.
- 41 Some Practical Points About Diseases of the Eye and Ear. Albert A. Cannaday.
- 42 Some Cases of Recurrent Intestinal Obstruction Deceptive in Symptomatology and Unique in Causative Agency. William L. Robinson.

38. **The Criminal Insane.**—Drewry's article is a plea for special provisions for the criminal insane in Virginia either by a particular asylum, which is not advisable at the present time with the small number, or by the establishment in the prisons of a special department for their care.

40. **Use of Glasses.**—Davidson advises the use of glasses and thinks that the correction of nervous symptoms is an even more important indication for their use than the improvement of vision. The glass which accomplishes this is by no means the one that gives the best distant vision when first worn.

The Journal of Nervous and Mental Disease, New York.

February.

- 43 A Case of Colloid Disease of the Blood Vessels of the Spinal Cord. F. N. Dercum.
- 44 *Arteriosclerosis of the Spinal Cord. William Hirsch.
- 45 *The Microscopic Findings in Four Gasserian Ganglia Removed for Trigeminal Neuralgia. Sidney I. Schwab.

44. **Arteriosclerosis of the Spinal Cord.**—This condition is, Hirsch remarks, rarely diagnosed. He thinks we must attribute it to a special predisposition. It is not by any means confined to the aged; arteriosclerosis has been observed in infants only a few months old. He has seen sclerosis of the peripheral arteries and heart in a number of young men between 20 and 25. A sharply-defined clinical picture can not be given, as might be supposed. The characteristic feature, however, is the fact that the cells of the anterior half of the cord are much more apt to become affected than those of the posterior part, and he explains this by the peculiarities of the blood supply.

Motor and trophic symptoms are much more frequent than the sensory ones. The diagnosis may be difficult; the clinical symptoms may closely resemble those of tabes or paresis. The Argyll-Robertson pupil, however, is lacking. He reports cases which had a close resemblance to both tabes and paresis. He thinks that the cases which he reports indicate that there is a special form of arteriosclerosis located in the spinal cord.

45. Neuralgia.—Schwab reports a microscopic examination of four gasserian ganglia removed for neuralgic troubles, and gives his conclusions as follows:

1. In six ganglia removed for trigeminal neuralgia, anatomic changes were found of sufficient importance to bring them in relation with the symptoms of this disease. 2. These changes in the cells do not point to them as the primary cause of neuralgia, but they may be taken to represent the effects of abnormal cell activity, the origin of which we are not able to point out. 3. The gasserian ganglion is the anatomical seat of the chief symptom of trigeminal neuralgia, that is, the attacks of neuralgic pain.

Annals of Otolaryngology, Rhinology and Laryngology, St. Louis.

November, 1902.

- 46 Fibropapilloma of the Larynx, with Unusual Movements. Hanau W. Loeb.
- 47 Notes on the Development of the Pharynx After Birth. Thomas Dwight.
- 48 *The Pathology and Diagnosis of Otitis Media Insidiosa, I. e., Sclerosis; with Remarks on the Treatment. Henry J. Hartz.
- 49 *Notes on the Radical Mastoid Operation. Chevalier Jackson.
- 50 Simple Ulceration of the Vocal Cords, with Report of Cases. Wendell C. Phillips.
- 51 Treatment of Principal Defects of Speech. James M. Brown.
- 52 Removal of Metallic Foreign Bodies in the Esophagus by the Aid of X-Rays. S. E. Allen.
- 53 A Case of Exophthalmos Following Mastoiditis. Secord H. Large.
- 54 Report of a Case of Ethmoidal Frontal Sinus and Antral Empyema, with Operation on Antrum and Middle Turbinate Body, Followed by Death. George B. Rice.
- 55 *Mucin and Malignancy; Facts and Theories. Wm. Stuart-Low.
- 56 The Etiology and Diagnosis of Ethmoidal and Sphenoidal Suppurations. H. Lambert Lack.
- 57 The Aims and Limitations of Intranasal Surgical Procedures in the Treatment of Chronic Non-Suppurative Middle-Ear Disease. P. McBride.
- 58 The Aims and Limitations of Intranasal Surgical Procedures in the Treatment of Chronic Non-Suppurative Middle-Ear Disease. Urban Pritchard.
- 59 Remarks on Cholesteatoma of the Middle-Ear. Dundas Grant.
- 60 On the Relation between the Formation of the Auricle of the Anthropoid Monkeys, and Certain Congenital Malformations of the Human Auricle. F. Rohrer.
- 61 The Provision in London for the Education of the Deaf. Atwood Thorne.
- 62 The Treatment of Deafness of Middle-Ear Origin. Chalmers Watson.
- 63 Remarks on the Anatomy of the Temporal Bone, with Lantern Illustrations. R. C. Elsworth.
- 63½ Apparatus for Intratympanic Hot-Air Treatment of Certain Forms of Catarrh of Middle-Ear. Adolph Bronner.

48. Otitis Media Insidiosa.—Hartz's article may be summarized as follows: Sclerosis is fundamentally a hyperplasia of the bony capsule of the labyrinth, or really a transformation of cartilage into bone, accompanied by hyperostosis. It is initiated by constitutional diathesis, such as rheumatism, gout, syphilis and scrofula, and is favored by local disease in the pharynx and throat, etc. Its locality is usually in the labyrinth capsule near the stapes articulation with the oval window, including fixation of the ossicles. It may involve also the semi-circular canals and cochlea, producing symptoms of nervous deafness. The functional test, the subjective symptoms and family history allow an early diagnosis. The symptoms are hyperemia of promontory, heredity, Schwabach test showing prolonged bone conduction, Rinne negative in a varying degree, defective-perception of one-half to one and one-half octaves of the low tones. Probably 10 per cent. of the middle-ear diseases are true sclerosis, designated as capsulitis labyrinthi, oto-sclerosis, spongification, dry middle-ear catarrh, and otitis media insidiosa. Hygienic and medicinal treatment are effective in the early stages of the disease. The more advanced stages may be improved by judicious treatment, with amelioration of the tinnitus.

49. Mastoid Operation.—Jackson advocates radical operation when, without mastoid symptoms, suppurative has continued three or four months after ossiculectomy followed by wick treatment. The only objection is that the hearing is occasionally affected and the discharge is not invariably cured. Failures are chiefly due to neglect to remove all diseased tissue, neglect of the after-treatment and the combination of a closed retro-auricular wound with a small meatal aperture. An

adequate meatal aperture can only be secured in the Stacke, Körner, Pansa and similar operations by extending the flap incisions far out into the concha. Either method will leave a gaping meatus amounting to deformity. Any attempt to get along without this will result in troublesome after-treatment and occasional failure.

55. Mucin and Malignancy.—Stuart-Low holds that mucin has a bactericidal property which has been overlooked and that its free secretion is a protection against malignant disease. He finds that hypomyxia is a common antecedent of malignancy. It is hereditary. He reports cases of cancer treated with mucin with more or less benefit.

Archives of Ophthalmology, New Rochelle, N. Y.

January.

- 64 On Recurrent Formation of Vesicles on the Cornea and Keratolagias After Injuries of the Surface of the Cornea. W. Stood.
- 65 *On Sclerosis of the Choroid, with Secondary Degeneration of the Retina. George Levinsohn.
- 66 On a Mycotic Affection of the Cornea. B. Wicherikiewicz.
- 67 Review of Sixty-nine Cases of Rupture of the Choroid, Compiled from the Records of the New York Ophthalmic and Antral Institute. F. E. D'Oench.
- 68 A Case of Localized Tuberculosis at the Head of the Optic Nerve; Microscopic Examination. Arnold Knapp.
- 69 *A Method for the Prevention of Symblepharon After Burns of the Conjunctiva. E. F. Snyder.

65. Sclerosis of the Choroid.—Levinsohn reports a case with changes of retinitis pigmentosa, pallor of disc, narrowing of the vessels and the irregular deposition of pigment in the retina, indicating atrophy of the retina, together with marked atrophy of the choroid extending nearly to the periphery and otherwise leaving only the macular region free. Near the disc the choroidal atrophy appears in the form of large white areas beneath the retinal vessels. Further, it is recognized by the lighter tint of the fundus and the clearness with which the choroidal vessels are seen, but the changes in the vessels are the characteristic symptoms and the primary lesion.

69. Symblepharon.—Snyder describes the method of treatment employed by him for symblepharon, which consisted in sandwiching the lower lid between two lead splints cut to fit and sutured together through the lid and having them drawn down by a bandage passing under the chin. This completely separates the wounded areas and keeps them stretched apart under constant tension while healing is taking place.

International Journal of Surgery, New York.

February.

- 70 *Measuring, Fitting and Putting on the Corset for Movable Kidney or Glenard's Disease. A. Ernest Gallant.
- 71 Nose and Throat Work for the General Practitioner. George L. Richards.
- 72 *What Is the Significance of Cervical Lacerations? Chauncey D. Palmer.
- 73 The Surgical Assistant—Operations on the Head. Walter M. Brickner.
- 74 *Riunions and Their Treatment. Robert T. Morris.
- 75 The Technics of Amputations. Robert H. Cowan.

70. Glenard's Disease.—From a careful consideration of others' work and his now wide experience, Gallant concludes that the symptom-complex, called movable kidney, Glenard's disease, etc., can not be accounted for on the ground of simple kidney mobility or prolapse. The nephroptosis is nearly always associated with ptosis of other abdominal and pelvic viscera, subnormal nutrition and nervous instability, and the treatment to be successful must be directed toward the replacement and support of the prolapsed organ, the correction of functional derangement, and the improvement of general nutrition. Nephropexy alone will fail and is indicated only when operating on a true "surgical kidney." The remedy he suggests is a corset, measured, fitted and put on while the woman is lying in the dorsal position with pelvis raised, and worn continuously, when not lying down, to elevate and support the viscera and immobilize the wandering kidney. It affords maximum pressure over the suprapubic area, minimum compression above the waist-line, and ample space for heart, lungs and intestines; gives a refreshing sense of comfort as soon as put on; Dietl's crises cease, and as time goes by gastrointestinal action improves; anemia is dissipated and a well-marked increase in body weight ensues. Such a corset has been found of great use to women with pendulous abdomens or adiposis, to replace the abdominal binder after childbed and celiotomy, and for

young girls when first they adopt skirts suspended from the waist. The wearing of such a corset is prophylactic against the production of Glenard's disease.

72. Cervical Lacerations.—The importance of cervical lacerations is insisted on by Palmer, who remarks as to their tendency to favor malignant growths and suggests the importance of their early recognition and correction.

74. Bunions.—A very simple operation will relieve most cases of bunions according to Morris:

A longitudinal incision, not more than half or three-quarters of an inch in length, along the line of the inner surface of the extensor tendons, exposes the site of the hyperostosis, and a sharp chisel separates the button of the bone readily from the head of the metatarsal bone. The open bursa can then be trimmed out with a pair of scissors without difficulty, and when the wound is sutured and the skin pressed against the surface of bone from which the button was removed, it becomes quickly adherent and the bunion is at an end. This treatment will suffice to give comfort in most cases and no further operative work is necessary, but if the patient wishes to have the phalanges of the great toe placed in normal line with the metatarsal bone it is necessary to divide the external ligament of the metatarsophalangeal articulation. This can be done subcutaneously, but in doing so we can not avoid cutting a pretty large branch of the dorsalis pedis artery, as a rule.

Hemorrhage from this cut artery we can usually disregard if a small, round, gauze pad is strapped firmly down on the dorsum of the foot at this point beneath a light splint. We must inform the patient, however, that sometimes it becomes necessary to enlarge the incision and ligate the artery. I have not been obliged to do this as yet, but have had to exercise a certain amount of skill in making proper application of pressure.

After the simple operation of removing the button of bone, and the thick bursa, very little further treatment is required, and the patient may be allowed to walk in from ten to twelve days.

Where it has been thought desirable to correct the hallux valgus by division of the external lateral ligament, we must apply a splint to be worn inside the shoe to hold the phalanges in place for several months. A very good one is made by hammering a piece of sheet copper into the shape of the sole of the foot, and turning up a flange which corresponds to the external surface of the great toe. A special stocking is then made with a separate compartment for the great toe, so that the flange from the splint can be interposed between the great toe and the next one.

New York State Journal of Medicine, New York.

February.

76 *What Advice Should Be Given to a Woman Suffering from Fibroid Tumor of the Uterus? J. Riddle Goffe.

77 *Urethral Stricture—Remarks Introductory to a Discussion on Its Modern Treatment. J. W. S. Gouley.

78 *External Perineal Urethrotomy. Parker Syms.

79 *Internal Urethrotomy. Lucius W. Hotchkiss.

80 The Surgical Diseases of the Kidney from the Standpoint of the Country Physician. George A. Leltner.

81 *Facts, Fancies and Fallacies in the Treatment of Consumption. M. J. Brooks.

76.—This article has appeared elsewhere. See THE JOURNAL, Feb. 21, p. 539, abstract 19.

77. Urethral Stricture.—Gouley's article reviews the whole subject of stricture and points out the treatment suitable for each variety.

78. External Perineal Urethrotomy.—Syms describes the operation and considers it a safe one and the operation of choice in urethral rupture, in intractable stricture, impassable stricture with urinary retention or false passages or urinary extravasation, and in those with an abscess or fistula. He thinks it might be the treatment of choice in cases of deep-seated strictures, even though they might be amenable to gradual dilatation, since the latter method never results in permanent cure, but must be repeated or continued at longer or shorter intervals. In emergency cases of sudden complete retention due to prostatic obstruction, where unwise instrumentation has been attempted, resulting in laceration of the urethra, etc., perineal urethrotomy is the safest and best procedure.

79. Internal Urethrotomy.—The objections to urethrotomy are reviewed by Hotchkiss, who holds that a well-planned and well-executed urethrotomy is often followed by permanent results as regards reconstruction, and that many cases that are ordinarily treated by external urethrotomy may be well and safely treated by the method of dilating internal urethrotomy combined with perineal cystotomy for drainage.

81. Tuberculosis.—The favorable conditions for the treatment of consumption are not to be found, according to Brooks, in climate, altitude, etc., or in the wards of general hospitals. What is wanted is a space of open country with a number of properly-equipped and supervised sanatoria in the neighborhood of our larger cities, and seaside institutions for tuberculous children.

Medical Bulletin of the Washington University, St. Louis. January.

82 *On the Value to the Surgeon of Some Modern Methods of Renal Diagnosis. J. P. Bryson.

83 *Prognosis in Neurasthenia. J. M. Bradley.

84 *The Removal of the Malleus and Incus Under Local Anesthesia in Chronic Suppurative Troubles of the Middle Ear. Selden Spencer.

82. Renal Diagnosis in Surgery.—While blood cryoscopy has some inconveniences, urinoeryoscopy, in connection with the separation of the urines, Bryson says, is of distinct value and especially in connection with hematocryoscopy. The phloridzin test is a very delicate and valuable one for the investigation of the functional capacity of the kidney. It is not difficult and should precede operation on the kidney whenever possible. Until further observations, the freezing and phloridzin tests should be made separately. The polyuria often caused by phloridzin may interfere with the freezing-point of urine from the healthy kidney. These tests should be regarded as aids only to diagnosis and as in no way taking the place of well-established methods.

83. Prognosis in Neurasthenia.—Bradley finds that neurasthenias due to external toxins are usually rapidly relieved by removal of the cause. Cases from overwork recover by rest provided the damage done is not too great. Those cases following childbirth or lactation without sepsis are favorable; with sepsis not so much so. Cases following infectious diseases and septic states are not so satisfactory; recovery is slower and likely to be interrupted and relapses are more likely. Natural sexual excesses do not ordinarily cause cases of neurasthenia of bad prognosis, unless they occur in persons approaching the age limit who have all their life been excessive. Neurasthenia from unnatural practices depends entirely on the mental attitude of the patient. If they can control themselves and change their habits, prognosis is good, otherwise bad. Neurasthenia from worry is rebellious to treatment, and is usually of long standing before coming to the physician. Improvement is slow, interrupted and subject to relapses. Neurasthenia from disordered metabolism has a wide range of possibilities. The prognosis regarding permanent cure is not so good. He calls attention to the effect of coffee in depressing the reflexes and finds that in cases of neurasthenia, other conditions being equal, if the reflexes are decreased, recovery is more rapid and permanent than when they are increased. This may possibly be due to coffee as a cause and its stoppage helping the case.

84. Ossiculectomy.—Spencer performs ossiculectomy under local anesthesia, first using adrenalin to render the parts bloodless and then applying a local anesthetic on cotton.

Memphis Medical Monthly.

February.

85 *The Nature and Treatment of Dyspepsia in Consumptives. Paul Paquin.

86 *The Treatment of Acute and Chronic Dysentery. M. Goltman.

87 Kidney Complications in Estivo-autumnal Fever. Ira B. Bartle.

88 A Case of Smallpox, with Sequelæ. W. T. Braun.

85. Dyspepsia in Consumptives.—The apparently pre-tubercular dyspepsia is described by Paquin. He does not think that it absolutely precedes tuberculosis, and insists on the importance of strength rather than gain in weight as a favorable symptom in the prognosis. He thinks we should look on persistent indigestion with the greatest solicitude, and watch the victims closely, so as to place them, if possible, in the condition to defeat the greatest plague of man—consumption.

86. Dysentery.—Goltman has treated dysentery, as he thinks, of the amebic variety, by local treatment and division of the rectum. His conclusions are:

1. The treatment of dysentery, acute or chronic, by topical application is most rational.
2. Topical applications are useless unless large volumes of fluid are used to distend the bowel.
3. Topical applications, as usually made, are very painful in all cases, particularly in those that are acute.
4. Topical applications, to be thorough and far-reaching, are unbearable to the patient, on account of the extreme pain they cause.
5. Anal division is a prime factor in facilitating the work of flushing the colon. Resection to the escape of fluid is removed, and it markedly relieves the tenesmus.
6. Anal division, cauterization of ulcers through the proctoscope, passage of a tube high up into the sigmoid through this instrument and thorough distension and flushing of the gut, are absolutely impossible without the aid of anesthesia.
7. Anesthesia rather relieved than produced shock in my cases. These patients

seem to take as kindly to chloroform as women in childbirth. 8. In my judgment, one is more likely to overdistend and perforate the gut without anesthesia than with it.

Kansas City Medical Index-Lancet.

February.

- 89 The Nestoils of the Profession. W. J. Moore.
- 90 *Carcinoma Uteri. H. C. Crowell.
- 91 The Life Insurance Examiner. O. L. Peak.
- 90.—See abstract in THE JOURNAL of January 10, p. 117.

Denver Medical Times.

February.

- 92 Monoplegia—Disturbances of Sensibility in Cortical Paralysis. Sol G. Kahn.
- 93 Résumé of X-Ray Therapeutics. G. H. Stover.
- 94 Morphineism. John Inglis.
- 95 Arteriosclerosis. E. C. Hill.

Louisville Monthly Journal of Medicine and Surgery.

February.

- 96 The Pathology, Diagnosis and Treatment of the Earlier Manifestations of Tuberculosis Involving the Hip-Joint. F. C. Wilson.
- 97 Suppurative Diseases of the Accessory Nasal Sinuses and Their Treatment. J. Morrison Ray.
- 98 The Treatment of Tuberculosis—A Word for Climate. Arch Dixon, Jr.
- 99 Treatment of Typhoid Fever. E. Kelley.
- 100 Pneumonia. C. G. Stephenson.
- 101 The Cure of Bolls. A. K. Bond.

Medical Examiner and Practitioner, New York.

January.

- 102 The Longevity and Mortality of Jews. Frederick L. Hoffman.
- 103 Race in Relation to Mortality, Longevity and Life Insurance. John M. French.
- 104 What Shall We Teach the Public in Regard to Tuberculosis? George W. Webster.

Buffalo Medical Journal.

January.

- 105 Salient Points in the Treatment of Catarrhal Deafness. Sargent F. Snow.
- 106 Unusual Causes of Lead Poisoning, with Report of a Case. John Zimmer.
- 107 To What Extent May the Female Genitals be Saved from Mutilation? J. Henry Dowd.
- 108 Immediate Repair of the Soft Parts Following Labor. Charles E. Congdon.
- 109 The Utilization of the Sac in the Radical Operation for Femoral Hernia. A. L. Hall.
- 110 Does the Public Telephone Transmit Disease? William G. Bissell.

February.

- 111 Progress, Liberty, Unity. Henry R. Hopkins.
- 112 Henry de Mondeville, the Man and His Writings. (To be Concluded.) Charles G. Cumston.
- 113 Uterine Fibroids or Myomata. J. F. Myers.
- 114 Remarks on Electricity in Medicine and Surgery. Joseph C. Clark.
- 115 Report of a Case of Labor with Double Uterus and Vagina. Henty T. Williams.

Medical Mirror, St. Louis.

January.

- 116 Filth Diseases. George M. Sternberg.
- 117 The Cure of Hernia. Henry O. Marcy.
- 118 Preparation of Operating Room in a Private House. Nicholas Senn.
- 119 Abdominal Section Following So-called "Vaginal Puncture," with Report of Cases. John Y. Brown.
- 120 American Surgery in the British Colonies. G. Frank Lydston.
- 121 About Our Bills. Robert T. Morris.

Texas Medical Journal, Austin.

February.

- 122 Report of a Case of Disarticulation of the Hip for Sarcoma of the Femur, with Remarks upon the Diagnosis and Prognosis in Sarcoma of the Femur. A. E. Halstead.
- 123 Report of a Case of Double Glioma Treated with X-Ray. H. L. Hilgartner.
- 124 Address, Kaufman County Medical Society. W. H. Monday.
- 125 Ligation of the Dorsal Vein of the Penis as a Cure for Atonic Impotence. J. S. Wooten.

Medical Herald, St. Joseph, Mo.

February.

- 126 The Diagnostic Utility of Blood Examinations. F. Gillmor.
- 127 Problems in Microscopy. Herbert Lee.
- 128 Dysmenorrhea. W. O. Henry.
- 129 Vesicular Mole. Mary Strong.

American Medical Compend, Toledo, Ohio.

February.

- 130 The X-Ray Treatment in Cancer and Intractable Skin Diseases—A Study and Review. John A. Wright.
- 131 Two Cases of Obstruction of the Bowels Caused by Meckel's Diverticulum. Hal C. Wyman.
- 132 Lateral Curvature of the Spine. Daniel Laferte.
- 133 Specialists. J. A. Kimmell.
- 134 Climatology. W. W. Hill.
- 135 Historical Sketch of Smallpox. J. T. Woods.
- 136 The Technic of Vaccination. G. A. Stanton.
- 137 On Trauma and Lesions of the Pelvic Structures. T. H. Manley.

Atlanta Journal-Record of Medicine.

February.

- 138 Parotitis Following Typhoid Fever. E. Bates Block.
- 139 Typhoid Fever; Its Antiseptic Treatment in 25 Consecutive Cases. James Billingslea.

Alabama Medical Journal, Birmingham.

January.

- 140 Tuberculosis in the Negro. Seale Harris.
- 141 Suggestions for the Treatment of Hip Disease in Children. William T. Berry.
- 142 The X-Rays as a Therapeutic Agent. A. V. L. Brokaw.

February.

- 143 Varieties of Calyces. Byron Robinson.
- 144 The Treatment of Opium Poisoning. W. S. Britt.
- 145 Stone in the Kidneys: With Report of Two Cases. Mack Rogers.
- 146 Acute Enterocolitis. W. S. Rountree.
- 147 Report of Cancer Treated by X-Rays. J. D. Gibson.
- 148 Tetanus, with Report of Case. Frank B. Reagor.
- 149 So-called Membranous Croup. C. H. Peete.

Carolina Medical Journal, Charlotte, N. C.

January.

- 150 What Shall be Done in Non-Penetrating Wounds of the Abdomen, with Probable Visceral Lesions? R. L. Payne.
- 151 Some Phases of Albuminuria. William S. Gordon.
- 152 Etiology and Treatment of Acne Vulgaris. F. H. Beadles.
- 153 The Organization of the Medical Profession. George W. Pressly.

New England Medical Monthly, Danbury, Conn.

February.

- 154 Remarks on Oviducal Gestation. Byron Robinson.
- 155 Coughs and Their Treatment. Alex DeSoto.
- 156 Ill-Defined Symptoms of Uricacidemia Treated by Thiallon. J. H. Tyndale.
- 157 Collaboration of Reports of Various Observers on the Etiology of Yellow Fever. Shown in Mosquitoes. J. McFadden Gaston.
- 158 Immunity. (Continued.) C. P. Robbins.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

January 31.

- 1 *The Etiology of Acute Rheumatism and Allied Conditions. R. M. Beatson and E. W. Ainley Walker.
- 2 *Diseases in Advanced Life. George H. Keyworth.
- 3 *Preliminary Note on the Parasites of Smallpox and Chickenpox. R. S. Thomson and John Brownlee.
- 4 *An Improved Method of Testing for Lead in Urine. F. H. Jacob and S. R. Trotman.
- 5 The Influence of Some Modern Drugs on Metabolism in Gout. William Bain.
- 6 On a Case Illustrating the Value of Physiologic Rest. W. M. Willis.
- 7 Case of Puerperal Hyperpyrexia of Malarial Origin. Thomas W. Clay.
- 8 Researches on Hibbertia Solubilis. John Reid.
- 9 *Human and Bovine Tuberculosis. Nathan Raw.
- 10 Soil Pollution and Disease in Camps. R. Caldwell.
- 11 The Supply of Pure Water to Troops in the Field. James Ferguson Lees.

February 7.

- 12 *Astereognosis in Tabes Dorsalis. George E. Rennie.
- 13 *Suture of the Brachial Plexus in Birth Paralysis of the Upper Extremity. Robert Kennedy.
- 14 Spinal Hydatid Cysts Causing Severe "Compression Myelitis." P. Tytler and R. T. Williamson.
- 15 Case of Hydatid of the Pleura. W. B. Ransom and W. M. Willis.
- 16 *The Effects of Vaccinating During a Menstrual Period. E. Rumley Dawson.
- 17 Preliminary Account of the Investigations of the Liverpool Expedition to Senegambia (1902). J. Everett Dutton and J. H. Todd.
- 18 A Note on the Treatment of Puerperal Insanity. Ernest W. White.
- 19 *On the Bilberry (Vaccinium myrtillus). Max M. Bernstein.
- 20 Fatal Case of Pemphigus Acutus Malignus. W. J. Cale.

1. Rheumatism.—Beatson and Walker have studied the bacteriology of rheumatism and come to the conclusion that a particular micro-organism is constantly associated with acute rheumatic lesions; that this organism can be cultivated on artificial media, and that on inoculation into animals it gives rise to the characteristic lesions of the disease and can again be isolated from them. Culturally this organism resembles the streptococcus, but it appears different from the streptococcus in its reaction with the Marmorek test. The bacterial specificity of rheumatism, they conclude, is, therefore, satisfactorily established. Its toxic specificity is yet to be investigated and is at present under examination.

2. Old Age.—Keyworth points out the disadvantages of old age in disease. He holds that attention to diet is necessary; old people who are healthy and live well are generally spare

tain points and questions suggested. He agrees with Aspinall as to the importance of individual susceptibility, and holds that in certain diseases, such as Graves' disease, a lowered skin resistance predisposes to the accidents of electric shock. As regards the different physiologic conditions of the subject, he has made experiments on rabbits and finds that narcosis makes them more resistant. Therefore, the statement of Aspinall that electric shocks are less dangerous during sleep is probably correct. The path which the current takes through the body is important, as Aspinall says, and the left side is more sensitive than the right, but he attributes this not to the effect on the valves of the heart, but rather to the effect on the ganglia of that organ. As regards the effect of burns he disagrees, holding that they are not a protection. The time during which the person is exposed to the current is important. The alternating and direct current shock seem both likely to be fatal or dangerous when of a high voltage. With a low voltage or tension the alternating current is more disagreeable. Instead of there being a difference between the two, in one the direct current paralyzing and the alternating producing spasm, Jellinek finds these currents alike seem to produce severe spasm during their action. The question asked by Aspinall, why medical men can not give us a more certain method of ascertaining whether a man is dead or not is answered by the author that in his experiments on animals he has observed several hours after apparent death signs of life were present, and for this reason he believes that attempts at restoration after shock should be continued for hours, or until some certain signs of death appear. The suggestion made by Aspinall that the body should be held head downward to flush the brain, he considers a very dangerous one, as the capillaries of the central nervous system are torn and, in such a condition, would only run a greater risk of cerebral hemorrhage. It would be better, he thinks, to perform venesection, and artificial respiration should be continued for hours; massage of the abdomen and of the region of the heart, placing the patient in a hot bath, subcutaneous injections of ether, camphor, strychnin should also be carried out. He believes many cases pronounced dead may be revived by taking the necessary time and trouble.

31. **Blood Examination.**—Bryant reports cases illustrating the value of blood examinations which, while not infallible, are certainly of great value.

32. **Intussusception.**—The conclusions summarized by Rigby from his series of cases are:

1. That in these cases immediate laparotomy should be insisted on without delay; 2, that no valuable time should be lost in attempting inflation of air or injection of fluids per rectum; 3, that the keynote of operative success is rapidity; 4, that in favorable conditions, as in hospitals and with skilled assistants, the mortality of reducible intussusceptions should be diminished to a very small percentage; and 5, that the chief points in the after treatment are (a) early feeding and (b) the use of opium when necessary.

34. **Pernicious Anemia.**—In this second installment of his article, Hunter gives the etiology of his 25 cases and other facts which seem to him to point out the differences of Addison's anemia from the progressive pernicious anemia of Biermer. He thinks a new nomenclature is advisable, and would suggest for this disease the name "infective hemolytic anemia" or Addison's anemia.

Intercolonial Medical Journal of Australasia, Melbourne.
December 20, 1902.

- 35 Notes on Puerperal Eclampsia. G. Rothwell Adam.
36 Simple Cysts of the Liver. Basil Killyngston.

Bulletin de l'Academie de Medecine, Paris.

- 37 (January 13 and 20.) Prof. P. Panas. Obituary.
38 Discussion of Value of Arrhenal.
39 *Discussion and Resolution in Regard to Notification of Diseases.

39. **Diseases Requiring Notification.**—The final resolution adopted by the Académie after long discussion was as given in THE JOURNAL of February 7, p. 389, with the exception that epidemic cerebrospinal meningitis was added to the list of diseases requiring compulsory notification. They are as follows: Typhoid fever, exanthematous typhus, variola and varioloid, scarlet fever, measles, diphtheria, miliary fever, cholera and choleric diseases, plague, yellow fever, dysen-

tery, puerperal infections and ophthalmia neonatorum when secrecy in regard to the pregnancy has not been enjoined, and finally, epidemic cerebrospinal meningitis. A second list comprises the diseases for which notification is optional, and requires the consent of the family. It includes pulmonary tuberculosis, whooping cough, la grippe, pneumonia and bronchopneumonia, erysipelas, mumps, leprosy, tinea and purulent conjunctivitis and granular ophthalmia. The Académie recommended that special postal cards should be supplied for the purpose to all physicians, health officers and midwives, the diseases to be designated by number.

Centralblatt f. Allg. Pathologie, Jena.

- 40 (XIII, 11.) Fat in Kidney Infarcts. F. J. Fischler.—Ueber den Fettgehalt in Niereninfarkten. Zugleich ein Beitrag zur Frage der Fettdegeneration.
41 Neue Methode zur Färbung (staining) von Horn Substanz. H. Ebbinghaus.
42 Die microscop. Diagnose des Chorion-Epithelioma malignum aus curetirtten Massen. L. Aschoff.
43 Die Wirkung des Toluyldiamins auf die Blutkörperchen (corpuscles). E. Schwalbe. Critical summary.
44 (No. 12.) Ueber den Kern (nucleus) und die amöboide Bewegung der Blutplättchen (blood-plaques). K. Wlassow.
45 (No. 13.) Beobachtungen bei der Färbung (staining) der elastischen Fasern (fibers) mit Orcein. E. Wolff.
46 Ueber die Anwendung (application) des Gallein zur Färbung (staining) des Central-Nerven-Systems. H. Aronson.
47 Ueber die Verbreitung (dissemination) von Geschwulst-Metastasen in der Lunge. A. Treutlein.
48 *Fortschritte auf dem Gebiete der Pathologie und path. Anatomie, 1901. E. Kromayer. Report of Progress.
49 (No. 14.) Die Serum-Diagnose verschiedener Blutarten und ihre Bedeutung für die forensische Medicin. K. Ziegler. Critical summary.
50 (No. 15.) Beiträge zur Pathologie des Pfortaderkreislaufs (portal circulation). F. Saxer.
51 Study of Stainability of Living Tissues. A. Motta Coci.—Ueber das funktionelle Verhalten der Wimperepithelien des Frosches gegen Methylblau.
52 (No. 16.) Histolog. Untersuchungen über die path. Eigenschaften eines aus dem "Murex brandaris" isolirten Microorganismus.
53 Die path. Anatomie der Porencephalie. Schütte. Collective Review.
54 (No. 18.) Fall von Adenocarcinoma der Leber (liver). G. Herxheimer.
55 Ueber Tuberculose quergestreifter (striated) Muskeln. S. Saltykow.
56 Gas Gangrän und Schaum- (foam) Organe. A. Sandler. (Commenced in No. 12.)
57 Pathologie at the Naturforscher Congress.
58 (No. 19.) *Experimentelle Untersuchungen über die Wirkung todtter Tuberkel-Bacilli. C. Sternberg.
59 (No. 20.) Connective Tissue Formation in Inflammation. E. Ziegler.—Ueber entzündliche Bindegewebs-Neubildung.
60 Ueber Septikämie und Pyämie. C. v. Kahlden.
61 (No. 21.) Ueber die path. Histologie des Conglomerat-Tuberkels im Cerebrum. O. Rabacel.
62 Zur Frage über die Einschlüsse in und zwischen den Krebszellen (cell inclusions). W. N. Kilmenko.

48. **Progress in Pathology in 1901.**—Kromayer cites as the most important works in this line in 1901 Bockhardt's study of eczema, the isolation of the microorganism of soft chancre, and Blaschko's study of the nerve distributions in the skin and their relations to cutaneous affection. He also mentions Judalewitsch's discovery that the nevus cells thrown up by the epithelium become transformed into connective tissue cells.

58. **Experimental Research with Dead Tubercle Bacilli.**—Sternberg found that he was able to induce the production in animals of the same tubercular lesions by injection of tubercle bacilli whether they were dead or alive. The only difference was that the extension of the process was proportional to the amount injected of the killed bacilli. This result was not constant, and only followed when a thick culture was injected.

Centralblatt f. Chirurgie, Leipsic.

- 63 (No. 50.) *Prevention of Hernia After Laparotomy. O. Wolff.—Wie lässt sich der Bauchbruch nach Laparotomie vermeiden?
64 Contrivance for Aseptic Self-Catheterization at Any Time.—W. Hirt.—Vorrichtung zum aseptischen Selbstkatheterismus ausser dem Haus.
65 (No. 51.) *Zur Radikal-Operation des congenitalen Leistenbruchs (inguinal hernia) kleiner Kinder (of small children). Karewski.
66 Improved Suture Forceps for Metal Sutures. J. W. Silberberg (Odessa).—Eine verbesserte Nähnange für Metallnähte.
67 Receptacle for Threaded Needles. H. Eckstein.—Sterilisirbarer Behälter für eingefädelt Nadeln.
68 (No. 52.) *Zur Technik der Magenausspülung (lavage of stomach). C. Neck.
69 Zur chirurgischen Technik. M. Silbermark.
70 (XXX, 1.) *Harte und weiche (hard and soft) Paraffin-Prothesen. R. Gersuny.
71 Zur Vereinfachung der Naht (simplification of suture) bei Anwendung des Murphy-Knopfes (button). Von Hacker.

- 72 Ein eigenartiger Bruchsackinhalt (peculiar contents of hernial sac). J. Wietung.
 73 (No. 2.) *Mobilisierung des Duodenum und Gastroduodenostomie. T. Kocher.
 74 *Sehnen- (tendon) Transplantation und Verhalten (behavior) der Sehnen beim Plattfuß (flatfoot). E. Müller.
 75 Wanderniere (wandering kidney) und Skoliose. O. Bender.
 76 (No. 3.) *Application of Artificial Fistula between Gall Bladder and Intestine. H. Thomson.—Bemerkungen zur Anlegung der künstlichen Gallenblasen-Darmfistel.
 77 Flexible Double Tracheal Canula. Tavel.—Eine lange biegsame Tracheal-Doppel-Kanüle.
 78 (No. 4.) *Prevention of Hernia After Laparotomies. J. Hahn. Die Verhütung des Bauchbruchs nach Laparotomien.

63. **Prevention of Hernia After Laparotomies.**—Wolff ascribes the tendency to hernia to the tension exerted on the suture by meteorism. He therefore directs special attention to the prevention of meteorism and has found that conditions were very much improved thereby.

65. **Radical Operation for Congenital Inguinal Hernia in Children.**—Karewski states that six to twelve years have elapsed in a number of cases since he operated on congenital hernia in very young children. His method is particularly applicable to severe cases of scrotal hernia, and its simplicity and facility commend it for general adoption. The incision is carried down only to the serosa and the processus vaginalis peritonei, forming the inner layer of the sac, is detached with the fingers. The parts are isolated to beyond the internal inguinal ring and at this point the peritoneum is tied. This affords a firm support and no further radical intervention is necessary even as late as the fourth year of age. The wound heals rapidly, although frequently soiled by the infant's discharges. He applies an iodoform dressing at first, changed every day, and later airoil salve.

68. **Improved Technic of Rinsing the Stomach.**—Neck finds that it is possible to empty the stomach completely under all circumstances, by elevating the pelvis after the ordinary rinsing is finished. By this means considerable amounts of stomach contents can be evacuated after the organ is supposed to be empty. He has confirmed these clinical findings on the cadaver. The most complete evacuation is secured when the stomach tube is gradually withdrawn after the pelvis is raised. This prevents any accumulation of the contents around the tip of the sound projecting into the fluid.

70. **Paraffin Prothesis.**—Gersuny is much pleased at the reception accorded his method of subcutaneous prothesis, but he does not consider the substitution of paraffin with a higher melting point as any advantage. He still uses what he first recommended: Ung. paraffini with a melting point at 35 or 40 C., but has been experimenting lately with a still softer combination, mixing one part of the above with four parts of olive oil. The oil is gradually absorbed, leaving the encapsulated particles of paraffin at the same distance apart. The size of the prothesis remains the same, but it is not so solid as when paraffin alone is used. When injecting the paraffin into very porous tissue he commences with a very small amount, not more than 1 c.c., and waits a week until this is completely encapsulated before injecting the remainder of the paraffin into the center of the first deposit. His finest cosmetic results have been obtained in cases of hemiatrophy of the face, in raising Thiersch flaps and imparting the natural color to them by the under layer of paraffin, and also in obliterating the pits left by smallpox.

73. **Technic of Lateral Gastroduodenostomy.**—Kocher thinks that his method of anastomosis between the stomach and the duodenum is far superior to all other methods of gastroenterostomy, as it entirely avoids the "vicious circle," and can be conveniently done outside of the abdomen. Others have used it, and their results confirm his dictum, but they have considered it necessary to restrict it to cases in which the duodenum was movable. This is not necessary, he states, as it is easy to mobilize the duodenum in all cases unless it is extensively adherent to the liver. The loop of the duodenum hangs free during embryonal life, and is still very movable in children, but later becomes adherent to the posterior wall of the abdomen, whence it is easily detached, as can be established on the cadaver. The thin sheet of the parietal peritoneum is slit perpendicularly to the right of the descending portion of the duodenum. The incision passes in front of the

right kidney, to the left of the descending part of the right flexure of the colon passing downward to the transverse colon. The parietal sheet of the peritoneum passes here from the anterior surface of the kidney to the colon and forms the upper sheet of the transverse mesocolon. The finger can be passed along the vertical portion of the duodenum above the peritoneal sheet of the kidney and into the foramen of Winslow, and thus lift up the hepato-duodenal ligament with the hepatic artery, portal vein and common bile duct. The thin sheet of peritoneum should be incised, not torn, parallel to the vertical portion of the duodenum and at least two finger widths from it. The portion of the sheet adherent to the duodenum can then be lifted and two fingers passed behind the latter, thus gently detaching it from the anterior surface of the spine, vena cava and aorta. The lower flexure of the duodenum can also be mobilized in the same way by slitting the peritoneum passing down to the colon. No large vessel is injured by the procedure. The head of the pancreas is raised with the duodenum so that the concave margin offers no resistance to the lifting of the duodenum. The posterior surface of the duodenum is not exposed down to the muscularis. It retains as the remains of its former peritoneal covering a sheet of connective tissue which, in comparison to the rest, has a raw appearance. These maneuvers mobilize the vertical portion of the duodenum to such an extent that it can be readily laid against the anterior surface of the pyloric portion of the stomach, above the greater curvature. The mobilization of the duodenum is restricted by the vessels, especially that of the superior flexure, but sufficient for the anastomosis, can easily be mobilized and the conditions realized by the change of position of the loop are peculiarly favorable for the anastomosis, as the duodenum retains its peritoneal covering intact on its anterior surface, now turned toward the left for union with the stomach. He has performed the operation by this technic in 5 cases, once for carcinomatous and four times for cicatricial stenosis of the pylorus.

74. **Transplantation of Tendon for Flat Foot.**—Müller detaches the tendon of the tibialis anticus from its attachment and draws it through a hole bored for it in the navicular bone, about the size of a pencil, passing from below upward and a little to the rear. The tendon is drawn through with a thread and is then pulled downward while the foot is pressed into normal shape. The end of the tendon is then drawn around the inner surface of the navicular and fastened to the bone with a wire suture. This holds the foot in its normal arched shape as if by a bridle. He emphasizes the necessity of cutting the Achilles as an indispensable preliminary to this and numerous other interventions on the foot.

76. **Technic of Artificial Gall Bladder Fistula into Intestines.**—Thomson's article is a plea for the more general use of the Murphy button for these operations.

78. **Prevention of Hernia After Laparotomy.**—Hahn attributes his success in the avoidance of post-operative hernias in a series of 88 laparotomies, to the use of sterile silk for the sutures, to the complete healing in of the threads and to his method of isolated suturing of the peritoneum and transverse fascia, then suturing the aponeurosis, exclusive of the muscle, as the fibers of the latter are liable to tear, concluding by the suture of the skin with a supplementary buried, suture in case of much fat. In preparing his hands he cleanses them mechanically, he states, in hot soapy water for forty minutes and then devotes ten minutes more to the rinsing, drying and soaking in a 1/1000 solution of sublimate. He draws the threads in the skin the seventh to ninth day, and allows the patient to get up the thirteenth. No abdominal bandage is worn.

Centralblatt f. Gynaekologie, Leipsic.

- 79 (No. 52.) *Zur Technik und Anwendung des vaginalen Sectio cesarea. E. Bumm.
 80 *Ueber Primiparae unter 16 Jahren. A. Palotai.
 81 *Zur Amenorrhoe dem Alter nach geschlechtsreifer Mädchen (of girls old enough to be sexually mature). L. Pincus.
 82 *Septische Mastitis. M. Bensinger.
 83 (XXVII. 1.) Zur Problem der geschlechtsbestimmenden Ursachen (causes of sex determination). B. S. Schultze.
 84 Indiziert eine Uterus-Ruptur Sectio cesarea bei wieder eintretender Gravidität? O. Küstner.

- 85 *Ueber die Vorzüge der Ether-Narkose. J. Pfannenstiel.
 86 Die Technik der Ether-Narkose an der gyn. Klinik zu Giessen. Kroemer.
 87 (No. 2.) *Weitere Fälle von vorgeschrittener Extra-uterin-Gravidität bei lebendem Kinde behandelt im Coeliotomie. A. Sittner.
 88 (No. 3.) *Fall von Endothelioma ovarii. M. Lange.
 89 Beitrag zur Anwendung des Bossi'schen Dilatatorium. Osterloh.
 90 Komplikation der Gravidität und Geburt (birth) mit Mast-darmkrebs (carcinoma of rectum). W. B. Semmelink.
 91 (No. 4.) Ueber instrumentelle Dilatation der Cervix resp. des Muttermundes an der hochschwangeren oder kreissenden Gebärmutter (in advanced pregnancy or in labor). W. Zangemeister.
 92 *2 Fälle von Lateralschnitt des Beckens (extramedian symphysiotomy) nach Gigli. E. Pestalozza.
 93 Zur Kenntniss der regionären Lymphdrüsen (lymph glands) beim Uterus-Carcinoma. E. Wertheim.
 94 (No. 5.) *Nachtheile (disadvantages) der Ventrofixation. R. Gradenwitz.
 95 Sectio caesarea und Ovariectomie wegen eingeklemmten (impacted) Ovarial-tumors. G. van der Bruele.
 96 Primäre Bauchhöhlen- (abdominal cavity) Gravidität auf einem Netzzipfel (pointed process in the omentum). K. Witthauer.
 97 Zur Eklampsie-Behandlung. E. Sintenis.

79. Vaginal Cesarean Section.—Bumm describes in detail 13 cases treated by vaginal cesarean section, which establish, he believes, that section of the anterior wall of the cervix alone is ample enough for nearly all cases, even at term, when there is no malignant growth and the uterus is to be retained. The portio is exposed and the sides seized with Collins' forceps. A sagittal incision from 5 to 7 cm. in length is then made in the mucosa of the anterior vaginal vault to the lip of the os. The loose cellular tissue between the bladder and cervix is cut with a few strokes of the scissors and the bladder pushed back to the orific. int. The anterior wall of the cervix is then incised on the sagittal line to this point. The upper edges of the wound are then drawn aside with two Collins', as for vaginal myotomy. This exposes the lower segment of the uterus, and after the bladder has again been pushed out of the way, the uterus wall is incised. By this means an incision 8 to 12 cm. long can be made under complete control of the eye and without opening into the peritoneum. Even a fetus at term can be readily extracted through it. The bleeding is most profuse when the mucosa of the vagina is incised. He waits for the spontaneous expulsion of the placenta, which usually follows in fifteen minutes. He sutures the uterus with a row of catgut sutures and has never observed any mishaps or complications. In one case the incision measured exactly 7 cm. from the orific. ext. upward, and through it a child weighing 3,250 gm., with a suboccipito-frontal circumference of 34 cm., was extracted without trouble. The lips of the wound, therefore, must stretch, but they have never torn in his experience. The vaginal walls are more resistant than the incised cervix, in primiparae, and lacerations are liable to occur in the perineum, vulva and side walls of the vagina. In the 13 cases described only one terminated fatally, and in this case the death was undoubtedly due to the severe eclampsia. In 8 the patients were aseptic, and there was no febrile reaction to the operation. Fever was noted four times; in two the patients had been infected by repeated examinations before entering the hospital; in one a pregnancy nephritis with edema prevented the union of the parts, and in one the uterus contained a purulent carcinoma. The wound in the vaginal vault and cervix healed faultlessly, with the exception of three infected cases. This median anterior hysterotomy leaves a harmless, easily healing wound, which does not interfere with further function of the parts. Even in a case of severe streptococcus infection, as the plica anterior of the peritoneum was not opened, there was no peritonitis. He has become convinced by his experience that in eclampsia the patient should be delivered at once after the first attack as the only means of safety, and he has found vaginal cesarean section the best method, if natural delivery be impossible. He thinks it is a less dangerous procedure than rapid dilation with the metal dilators, which are apt to lacerate the cervix. In one of his cases the operation was undertaken on account of the placenta previa, and the results encourage him to believe that this will be found the best method also for treating this condition. Many women bleed to death, not from the vessels in the placenta previa, but from lacerations in the cervix

or at the point of implantation of the placenta. These can be prevented by vaginal section. He also considers it useful as a means of artificial delivery in case of an absolutely torpid uterus. Vaginal cesarean section exposes to less dangers than ways of ineffectual maneuvers to arouse the torpid uterus to action. In the total of 39 cases of vaginal cesarean section which he tabulates, the mortality was 8, and in 3 of these the death was due undoubtedly to the coincident eclampsia and in 2 others to heart disease. Anemia, peritonitis and sepsis from the dead fetus were noted in the other fatal cases. The cesarean section was undertaken on account of carcinoma in 23 cases, and of eclampsia in 6.

80. Primiparae Under 16.—Palotai has observed 25 cases of childbirth under 16, a proportion of .145 per cent. of 8,054 primiparae admitted to the Budapest Frauenklinik. Among them were 7 who were only 14, and 18 who were 15 years old. One of the 14-year-old mothers had been blind from birth, another had been violated, and 2 others had never menstruated. In the others menstruation had occurred from once to five times. The course of the pregnancy was normal, but abortion occurred once, and delivery was premature in 28 per cent., but was exceptionally brief in all, and all the children were viable. The puerperium was normal, the prognosis for injury of the parts during delivery is very good and also the prognosis for the welfare of the child. When Nature confers the possibility of conception she evidently makes arrangements for its consequences to follow without hindrance.

81. Amenorrhea of Girls Old Enough To Be Sexually Mature.—Pincus thinks that this field is too much neglected. When the amenorrhea is long continued, even without symptoms, internal exploration is indicated in case of preceding infectious diseases or constitutional anomalies, menstrual molimina or vicarious hemorrhage.

82. Septic Mastitis.—Bensinger's patient was ii-para, 30 years old, healthy and with no morbid antecedents except a severe febrile reaction to an insect sting nearly two years before. The birth and puerperium were normal, and the patient was tended by a superior nurse. The eleventh day symptoms of mastitis developed, and the nursing babe was weaned. The babe developed the second day a phlegmonous inflammation behind the ear, and died the third day with multiple small cutaneous abscesses. The mother died two weeks after the first symptoms of the septic mastitis, with multiple suppurative foci. In seeking for the cause of the infection, an old, dirty book from a circulating library was found in the bed. The patient had been in the habit of reading while nursing her babe. Bacteriologic examination of the leaves of the book disclosed numerous streptococci, associated with other microorganisms. Bensinger also refers to the possibility that the blood poisoning from the insect sting may have left some latent focus. The nurse had tended a scarlet fever patient six weeks before being called to this case, but all her patients in the interim had been "normal cases." The sequel to the case was a defamatory letter sent to the physician by the sister of the deceased, for which she was condemned by the local court to a fine of \$63 and costs.

83. Cause of Sex Determination.—Schultze argues to prove that the sex of the ovum is already settled in the ovary.

85. Advantages of Ether.—Pfannenstiel proclaims that the correct technic for an ether narcosis is to induce a tipsy condition with a small amount of ether, the "ether-Rausch," then slight intoxication from the carbon dioxide of the expired air, and thereafter, with a regular supply of weak ether fumes, maintain the narcosis at the proper point, raising the mask from time to time so that a little atmospheric air may be breathed. By this method he finds 100 c.c. of ether sufficient for even protracted operations. The mouth, throat and nose are rendered as aseptic as possible before commencing, which reduces the danger of pneumonia, and the room is kept very warm and every effort made to avoid chilling the patient on his way to and from the operating room. He aids the elimination of the ether by inducing diuresis and sweating. If drinking of fluids causes vomiting, this is regarded as an aid in the elimination. He also has water injected per anum.

Ether leaves the body much more rapidly than chloroform. With these precautions, he considers ether as almost completely harmless, while chloroform is always a serious poison.

87. **Extra-Uterine Pregnancy with Living Child.**—Sittner adds 16 more cases to the 126 he collected and published in the *Landau Festschrift*; 3 of them date since 1900. The mortality was 15 per cent. in the 40 cases occurring between 1896 and 1900. In one of the latest series the placenta had developed on the peritoneum and liver. The placenta was left. The patient died. In one the placenta developed on the intestines and in three on the organs in the pelvis. The mortality was very high in these and in the similar cases previously described. Four of the eight viable children are living. One died three weeks later of a gastro-intestinal trouble, and three others in from two to sixty hours. The fetuses weighed from 3,500 to 5,000 gm. on an average. The results of Sittner's compilation indicate that the possibilities of well-developed, viable children under these circumstances are greater than hitherto accepted. In seven cases the mothers were supervised and the pregnancy carried from the fifth, sixth or seventh month to three weeks of term, thus securing viable children. In the majority of cases extra-uterine pregnancy is followed by permanent sterility, but not always. There was subsequent normal pregnancy in eight out of twenty-five cases followed to date. He gives the particulars of the last series of cases in a convenient tabular form.

88. **Endothelioma Ovarii.**—Lange describes a case of endothelioma of one ovary which he extirpated, leaving the apparently sound mate in place. But the further course of the case proclaimed that the other ovary was likewise the seat of malignant disease. He therefore recommends as a routine procedure the removal of the second ovary in such cases, especially if the patient is 40 or over.

92. **Extramedian Symphysiotomy.**—Pestalozzi has applied in two cases Gigli's extramedian incision for opening the pelvis, described in *THE JOURNAL* of July 26, 1902, p. 231. Comparing the results with seven previously treated by the classic symphysiotomy, he considers the new operation a great progress. Healing was rapid and perfect without drainage, and the loss of blood was trifling, while consolidation occurred with remarkable promptness. He found it necessary to insert his finger behind the bone to prevent injury of the bladder in introducing the saw.

93. **Regional Lymph Glands in Uterine Cancer.**—Wertheim found in two-thirds of his cases of cancer of the uterus in which the lymph glands were involved, that the glands exhibited a polymorphous cellular construction. In the other one-third, however, the glands showed a tube-shaped formation lined with a single layer of ciliated epithelium. These formations were observed in 13 per cent. of all the cases that came to operation, but examination of 80 cadavers free from uterine cancer failed to disclose anything of the kind. In three instances it was possible to behold the direct transformation of a gland thus affected into a typical alveolar carcinoma, with polymorphous cells. The formations in question must, therefore, be considered metastases of the malignant neoplasm in the uterus.

94. **Disadvantages of Ventrofixation.**—Gradenwitz expresses gratitude to Kreutzmann for his denunciation of ventrofixation, referred to in this column. The smoothness and facility of the operation do not compensate for the consecutive metritis or hernia, as he illustrates by five typical cases.

Deutsche Zeitschrift f. Chirurgie, Berlin.

- 98 (LXVI, 1-2.) *Die Influenza in chirurgischer Beziehung. G. Perez. (Durante's Clinic, Rome.) Concluded.
- 99 Zur Etiologie der Coxa Vara. M. Haedke.
- 100 Ueber das Ballon-Symptom bei Darm-Obstruction. J. Blumberg.
- 101 *Zur Carcinom Frage. W. Merken.
- 102 Untersuchungen auf die Lymph-Bahnen (tracts) der Wangenschleimhaut (mucosa of cheek). A. E. Polya and D. v. Navratil.
- 103 *Fall von subacut verlaufender traumatischer Herz- (heart) Ruptur mit Tod (death) am 9 Tag. H. Ebbinghaus.
- 104 Die Reposition einer veralteten path. Hüftgelenkverrenkung (hip dislocation). J. Schoemaker.
- 105 Ein Fall von Bildung (pocket formation) des Astes. (oxygen) Chloroform-Narkose. L.

98. **Influenza in Relation to Surgery.**—Perez has been making extensive researches on animals in the way of immunization against the influenza bacillus and study of the lesions produced by the infection. He says there is scarcely an organ or tissue that may not be attacked, and the local processes range from hyperemia to abscess formation or effusion. The tympanum is the most frequent site of experimental infection. He found that he was able to induce a slight and transient active immunity. The bacilli were almost invariably found intracellular and the pus was also frequently sterile. Another point to differentiate pure influenza infection from the pneumococcal is the presence of fibrin in the latter. He also reviews 520 articles that have been published on the surgical aspect of influenza.

101. **Prognosis of Carcinoma of Mamma.**—Merkens regards all new growths in the mamma as suspicious, with the sole exception of Schimmelbusch's fibro-adenoma. Ablation of the nodule is sufficient in case of the latter. All others should be considered malignant and amputation of the breast follow the diagnosis. He scouts the idea that cancer is directly contagious.

103. **Traumatic Rupture of Heart with Subacute Course.**—Ebbinghaus warns that the prognosis should be guarded in case of traumatism affecting the left thorax, even when the walls are elastic and no serious injury is apparent; death may result as late as the ninth day, as in the case he describes. The rupture at first was probably merely a partial laceration of the heart wall, but it gradually became a complete rupture as the region of the lesion became degenerated. The vagueness of the manifestations on the part of the heart is no criterion that the danger is past. The tear may gradually grow larger without causing appreciable clinical symptoms. In his case the left ventricle was the site of the rupture, and the pulmonary valve had also been injured.

Archivio Italiano di Otolgia, Etc., Turin.

- 107 (XIV, 1.) *Sull' uso della formalina nella cura delle otiti medie purulente croniche. G. Geronzi.
- 108 Mancanza (lack) quasi completa della squama temporalis. A. Bovero.
- 109 Nistagmo riflesso di origine nasale. G. Ostino. Four cases.
- 110 Sulla tiroidite acuta. G. Garbini. Two cases.
- 111 *La condro-pericondrite laryngea. E. P. Arias.

107. **Formalin in Treatment of Purulent Otitis Media.**—Geronzi reports the results of formalin treatment of 55 cases of chronic purulent otitis media. He commenced with a 2 per cent. glycerin solution and gradually increased the strength to 5 per cent. The middle ear was tamponed with a small strip of gauze impregnated with the fluid, or two or three drops of the 5 per cent. solution were instilled. This treatment was applied only in those cases that had proved rebellious to ordinary measures. Improvement was manifest by the second or third application; and a complete cure between the tenth and fifteenth application was obtained in 34 out of the 55. The duration of the affection in some of the cured cases was from ten to twenty-one years. The formalin reduced the size of the granulations in the tympanum and, supplemented by nitrate of silver, was able to accomplish their complete disappearance in a number of cases. He found that the addition of 5 per cent. of sodium carbonate to the 5 per cent. solution of formalin increased the tolerance, while others have proved that it also enhanced its bactericidal power.

111. **Laryngeal Chondro-Perichondritis.**—Arias concludes his comprehensive study of this subject by recommending prompt tracheotomy, which not only insures the respiration but also leaves the affected parts in repose. It may be possible to abort the abscess, as was accomplished by Ferreri with a course of salicylic medication, followed by subcutaneous injections of iodated milk, as recommended by Scavo. The patient was a boy of 10, with chondro-perichondritis of the left half of the larynx. Tracheotomy was postponed from day to day, as there were no indications of an abscess, and improvement continued under this treatment. The lad was dismissed in four weeks with no further traces of tumefaction. If an abscess has formed, tracheotomy is the only treatment. In case of subsequent stenosis, Schroetter's method of intuba-

tion is in use in the Italian clinics. Serum therapy has always proved disastrous in tubercular inflammation, but the course of the affection may be arrested with the use of adrenalin. He has witnessed complete cures under supplementary hygienic and prophylactic measures. It is very important, however, particularly in these cases, to place the organ in repose by means of an early tracheotomy. Even in case of syphilitic inflammation a tracheotomy aids the healing process and the patient can be dismissed sooner. The prognosis of typhoid perichondritis is grave. It always entails an abscess, and Bayle had only 1 out of 17 recover without operation, Valleix only 6 out of 31, while Obédinaire cured 13 out of 24 by surgical intervention. If an abscess ruptures spontaneously the pus invades the bronchi and lungs with various sequelæ. Primary chondritis is acute; the secondary has a more chronic course. The dyspnea increases during sleep; the interspaces and epigastrium sink in during inspiration; the veins of the neck are turgid, and the superficial venous network of the thorax is visible. In the acute form the symptoms may suggest edema of the larynx. There is likewise more or less inflammatory paralysis of the posterior crico-arytenoid muscles. The cricoid cartilage is most frequently involved. Attacks of gout elsewhere may suggest the possibility that the perichondritis may be of the same nature.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

MANTON'S OBSTETRICS. A Manual of Obstetrics for Students and Practitioners. By W. P. Manton, M.D., Adjunct Professor of Obstetrics, and Professor of Clinical Gynecology, Detroit College of Medicine. Pp. 265. With 82 Illustrations. Cloth. Price, \$1.00. Philadelphia and New York: Lea Brothers & Co. 1903.

FORTY-SEVENTH ANNUAL REPORT OF THE EXECUTIVE COMMITTEE OF THE HARTFORD HOSPITAL. Including the Eighteenth Annual Report of the Old People's Home and the Twenty-fifth Annual Report of the Hartford Hospital Training School for Nurses. Paper. Pp. 115. Hartford Press. 1902.

TOXICOLOGY. The Nature, Effects and Detection of Poisons, with the Diagnosis and Treatment of Poisoning. By Cassius M. Riley, M.D., Professor of Chemistry and Toxicology in Barnes Medical College. Cloth. Pp. 132. Price, \$1.50. St. Louis: Lewis S. Matthews & Co.

SEVENTH ANNUAL REPORT OF THE BOARD OF MANAGERS OF THE SPRINGFIELD STATE HOSPITAL of the State of Maryland, Sykesville, Md., to His Excellency, the Governor of Maryland. Oct. 1, 1902. Paper. Baltimore: The Sun Book and Job Printing Office. 1903.

THE NOSE AND THROAT IN MEDICAL HISTORY. By Jonathan Wright, M.D. Cloth. Pp. 244. Price, \$2.00. St. Louis, Mo.: Lewis S. Matthews & Co.

TRANSACTIONS OF THE BERKS COUNTY MEDICAL SOCIETY for the Year 1902. Volume VII. Paper. Pp. 124. Reading, Pa.: Norton Printing House. 1902.

New Patents.

Patents of interest to Physicians, February 3 and 10:

- 719781. Clinical thermometer. Charles J. Fritsch, Brooklyn.
- 719586. Insufflator. Sayer Hasbrouck, Providence, R. I.
- 719587. Atomizer. Sayer Hasbrouck, Providence, R. I.
- 719588. Spraying device. Sayer Hasbrouck, Providence, R. I.
- 719675. Support for massage machines. Francis King, San Francisco.
- 719487. Dilator. Wm. E. Minor, Kansas City, Mo.
- 719901. Photochemical and electrotherapeutic apparatus. Albert E. Sterne, Indianapolis.
- 719915. X-ray apparatus for treating diseases. Henry E. Waite, New York.
- 720311. Corn-eradicator. John B. Abler, Akron, Ohio.
- 720107. Door for sterilizers. Julius Brucker, Brooklyn.
- 720234. Sterilizing case for thermometers. Oscar H. Elbrecht, St. Louis.
- 720020. Medicinal battery. Fred Grimschaw, Northeast, Pa.
- 720159. Sterilizer. Richard Kny, Brooklyn.
- 720381. Hypodermic syringe. John N. Ranger, Evansville, Ind.
- 720071. Hot-air syringe. Joseph I. Richards, San Francisco.
- 720483. Electromedical apparatus. Granville S. Rider, New York.

The Public Service.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending Feb. 14, 1903:

P. A. Surgeon E. J. Grow, detached from the *Marblehead* and directed to wait orders.

P. A. Surgeon W. L. Bell, detached from the naval hospital, Mare Island, Cal., and ordered to the *Marblehead*.

P. A. Surgeon R. W. Plummer, commissioned passed assistant-surgeon, with rank of lieutenant, junior grade, from June 17, 1902.

Asst.-Surgeon R. E. Briggs, appointed assistant surgeon, with rank of lieutenant, junior grade, from Jan. 19, 1903.

Asst.-Surgeon R. L. Sutton, F. W. S. Dean, appointed assistant surgeon, with rank of lieutenant, junior grade, from Jan. 20, 1903.

A. A. Surgeon W. H. Block, ordered to the naval recruiting office, Chicago.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine Hospital Service for the seven days ended Feb. 12, 1903:

Surgeon G. M. Magruder, granted leave of absence for one day.

Asst.-Surgeon C. E. Decker, granted leave of absence, on account of sickness, for ten days.

Asst.-Surgeon H. B. Parker, to proceed to New Orleans, for special temporary duty.

A. A. Surgeon H. J. Hamilton, granted leave of absence, on account of sickness, for thirty days from Dec. 27, 1902; granted fifteen days' extension of leave of absence, on account of sickness, from January 27.

A. A. Surgeon H. C. Sibree, granted leave of absence for six days from February 7.

A. A. Surgeon C. F. Ulrich, granted leave of absence for twenty-five days from February 15.

Pharmacist Henry Gahn, granted leave of absence for five days from Feb. 6, 1903, under provisions of Paragraph 210 of the regulations.

RESIGNATION.

A. A. Surgeon Pedro Malaret, resigned, to take effect Jan. 31, 1903.

BOARD CONVENED.

Board convened at Washington, D. C., Feb. 9, 1903, to consider an outline plan for the marine-hospital to be erected at Savannah, Ga. Detail for the Board: Assistant Surgeon-General J. H. White, chairman; Assistant Surgeon-General L. D. Williams; Assistant Surgeon-General W. J. Pettus, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Feb. 14, 1903:

SMALLPOX—UNITED STATES.

- Alabama: Mobile, Feb. 6, 2 cases.
- California: Los Angeles, Jan. 17-24, 4 cases; Sacramento, Jan. 24-31, 4 cases; Stockton, Jan. 1-31, 10 cases.
- Colorado: Denver, Jan. 17-24, 17 cases.
- Illinois: Chicago, Jan. 31-Feb. 7, 16 cases; Galesburg, Jan. 24-31, 5 cases.
- Indiana: Indianapolis, Jan. 17-24, 152 cases, 36 deaths.
- Maine: Biddeford, Jan. 31-Feb. 7, 16 cases; Eastport, Jan. 31, 7 cases.
- Maryland: Baltimore, Jan. 31-Feb. 7, 4 cases; Cumberland, Jan. 24-31, 1 case.
- Massachusetts: Jan. 31-Feb. 7, Boston, 6 cases; Haverhill, 1 case; New Bedford, 1 case.
- Michigan: Detroit, Jan. 24-31, 43 cases; Grand Rapids, Jan. 31-Feb. 7, 14 cases.
- Missouri: St. Louis, Jan. 24-Feb. 1, 26 cases.
- Nebraska: South Omaha, Jan. 1-31, 1 case.
- New Jersey: Camden, Jan. 27-Feb. 3, 2 cases; Newark, Jan. 31-Feb. 7, 2 cases.
- New York: New York, Jan. 31-Feb. 7, 2 cases.
- Ohio: Cincinnati, Jan. 30-Feb. 6, 11 cases, 1 death; Dayton, Jan. 31-Feb. 7, 6 cases; East Liverpool, Jan. 1-31, 2 cases; Hamilton, Jan. 1-31, 5 cases; Toledo, Jan. 10-31, 19 cases.
- Pennsylvania: Altoona, Jan. 31-Feb. 7, 1 case; Philadelphia, Jan. 31-Feb. 7, 33 cases, 2 deaths.
- South Carolina: Greenville, Jan. 24-31, 1 case.
- Utah: Salt Lake City, Jan. 24-31, 19 cases, 1 death.

SMALLPOX—FOREIGN.

- Austria: Prague, Jan. 3-17, 14 cases.
- Barbados: Jan. 2-16, 4 cases.
- Belgium: Antwerp, Jan. 3-17, 10 cases, 3 deaths.
- Brazil: Rio de Janeiro, Dec. 27-Jan. 10, 9 deaths.
- Canada: Winnipeg, Jan. 1-31, 2 cases.
- Canary Islands: Las Palmas, Dec. 27-Jan. 17, 31 cases, 1 death.
- Germany: Altona, to Jan. 22, 11 cases, 1 death.
- Great Britain: Birmingham, Jan. 17-24, 5 cases; Leeds, Jan. 10-24, 19 cases; Leith, Jan. 10-17, 2 cases; Liverpool, Jan. 17-24, 51 cases, 1 death; Nottingham, Jan. 3-10, 1 case; Sheffield, Jan. 10-24, 3 cases.
- Mexico: City of Mexico, Jan. 18-25, 5 cases, 2 deaths.
- Russia: Moscow, Dec. 27-Jan. 3, 1 death; Odessa, Jan. 3-17, 12 cases; St. Petersburg, Jan. 3-10, 49 cases, 6 deaths.
- Straits Settlements: Singapore, Dec. 20-27, 3 deaths.
- Turkey: Constantinople, Jan. 4-11, 3 deaths.

YELLOW FEVER.

- Brazil: Rio de Janeiro, Dec. 27-Jan. 10, 56 deaths.
- Mexico: Tampico, Jan. 18-31, 3 deaths; Vera Cruz, Jan. 24-31, 6 cases, 3 deaths.

CHOLERA—FOREIGN.

- Egypt: Alexandria, Jan. 12-19, 4 cases, 3 deaths.

PLAGUE—INSULAR.

- Hawaii: Honolulu, Jan. 29-30, 2 deaths.

PLAGUE—FOREIGN.

- Brazil: Rio de Janeiro, Dec. 27-Jan. 10, 6 deaths.
- Mexico: Mazatlan, to Feb. 4, 278 cases, 217 deaths.

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No. 10.

Original Articles.

LARYNGECTOMY FOR CARCINOMA.*

E. FLETCHER INGALS, M.D.
CHICAGO.

The text for this article was furnished by a patient who was brought to our clinic for diseases of the chest, throat and nose at Rush Medical College by Dr. Geo. A. Torrison, who had found him among his patients about six months previously. Dr. O. T. Freer had also seen the patient with him and a microscopic examination of a small mass removed for the purpose had confirmed their diagnosis of carcinoma of the larynx, which diagnosis was also concurred in by Prof. L. Hektoen.

THE PATIENT AND HIS HISTORY.

The patient, L. T., was a large, fine-appearing man, 47 years of age, who came to this country from Norway thirty years ago. He weighed about 200 pounds and had every appearance of robust health excepting the one symptom of hoarseness. He was a jeweler by trade, married and had three healthy children. He stated that he had malaria for three months seventeen years ago, had an attack of typhoid fever and also a slight attack of pneumonia some years ago, and in November of last year a rheumatic affection of the left thigh for a few days, which was followed by another slight pneumonia. Excepting these he had never been sick. He denied specific taint and there was nothing to cause us to question this statement. His mother died of old age at 83, father living at 83 in good health, two brothers and one sister living and well, aged respectively 56, 51 and 49.

The patient was a user of tobacco and alcoholic stimulants in moderate quantities, but had never been given to excess of any kind. There was nothing in his personal history to indicate the cause of the disease and there was no hereditary history of syphilis, malignant disease or tuberculosis. The hoarseness began eighteen months previously; it had gradually increased for twelve months, or until he came under the care of Dr. Torrison, six months before I saw him. At first, although the true nature of the growth was suspected, the diagnosis was in doubt, and the doctor wisely put him on iodid of potassium, under the influence of which the voice gradually improved for two months. When first seen by Dr. Torrison there were two smooth white nodules involving the middle third of the left vocal cord, attended also by some swelling or thickening of the ventricular band immediately above it. In November, 1901, the growth showed considerable increase in size and had already

spread to the anterior end of the right cord, but there was no glandular enlargement.

THE PRELIMINARY TRACHEOTOMY.

On his first presentation at our clinic in the latter part of January, I found a growth of comparatively small size involving all of the left cord, giving it an irregular edge with a rough, slightly ulcerated surface, and increasing its size irregularly about four times. The false cord was also thickened and the right side was involved to about one-third this extent. There was no glandular involvement. I told the class that while I believed that, as a rule, patients with malignant growths in the larynx would live longer and suffer less from a simple tracheotomy than from laryngectomy, yet in this case the conditions were so favorable that I advised the latter operation. The patient was admitted to the Presbyterian Hospital February 4, and the next day at the college clinic I did a preliminary tracheotomy under cocain anesthesia. The patient made an uneventful recovery from this operation, and at my clinic on February 26 was again operated on by the late Prof. Christian Fenger, who did a laryngectomy, which proved to be the doctor's last operation, as he died of pneumonia about a week later.¹

PROFESSOR FENGER'S CLINICAL REMARKS.

I am greatly indebted to Dr. Karl Doepfner, Professor Fenger's assistant and associate instructor in surgery, for the report of Professor Fenger's remarks on this occasion, and to Dr. Otto T. Freer, instructor in diseases of the chest, throat and nose, for the clinical report of the operation.

Because of the comparatively small growth, absence of enlarged glands and its intrinsic character, I hoped that J. Solis-Cohen's operation might be performed, but after opening the larynx Professor Fenger found that the growth had perforated its walls; therefore, complete laryngectomy was the only operation to be considered. Before coming to the operation Professor Fenger spoke as follows of the history of this procedure, its results and the various indications for removal of this organ, illustrating his remarks with numerous free-hand chalk illustrations on the blackboard, which, unfortunately, I am unable to reproduce. Professor Fenger said:

THE HISTORY OF THE OPERATION.

Regarding the history of this operation in 1829 Albers of Bonn did experimental laryngectomy on dogs for physiologic purposes, but surgery was not yet advanced enough to make practical use of his investigations. In 1854 Bernhard von Langenbeck of Berlin intended to do it, but the patient refused the operation. In 1856 Koeberle also pointed out its feasibility. In 1866 Watson of Edinburgh performed the first total

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. J. F. Barnhill, C. R. Holmes and G. H. Makuen.

1. Editor's Note.—This paper is published on the anniversary of Dr. Fenger's death, which occurred March 7, 1902.

extirpation for syphilitic stenosis. In 1870 Czerny made successful experiments on dogs for the purpose of surgical intervention in man, whereon in 1873 Billroth for the first time totally removed a carcinomatous larynx. Up to the end of 1897 we find in the literature 267 cases of total laryngectomy. Since then many more cases have been published.

POINTS OF ORIGIN OF CARCINOMATA.

It is important to distinguish between intrinsic and extrinsic carcinomata of the larynx.

Intrinsic carcinomata may originate from the true cords, the false cords, the interarytenoid folds, the ventricles of Morgagni or the subglottic space.

Extrinsic carcinomata spring from the epiglottis, posterior wall of larynx—pharyngeal surface (out of 18 cases this point of origin has been found 13 times), the ary-epiglottic folds and the sinus pyriformes.

J. Sendziak, to whom we owe the most recent and best statistical work, gives the following data: Out of 273 cases where the point of origin could be located beyond any doubt, the carcinomata were intrinsic in 204 cases or in 74 per cent., and among these cases the true cords were 107 times the primary seat of the affection. This means that the carcinomatous new growth in the larynx attacks by preference the parts covered with squamous epithelium. Consequently, the squamous-celled carcinoma is the predominant variety in the larynx, while the cylindrical-celled and the glandular (adeno-) carcinomata are less common. It means also that wherever the intrinsic carcinoma starts it follows in its propagation the squamous-celled surface. In other words, it spreads from one side to the other, most frequently along one cord to the commissure and then to the other cord (circular carcinoma).

Early regional infection of the neighboring lymph glands is not always manifest. It is more common in the later stages of the disease, and yet more frequent in the extrinsic carcinoma. This peculiarity is said to be due to the scarcity of lymph vessels in the walls of the laryngeal cavity proper. Metastases in remote organs have been observed in but a few cases. We may, of course, occasionally see a secondary carcinoma in a larynx, which had its primary seat in some neighboring organ, base of tongue, pharynx, thyroid gland, trachea, esophagus.

ETIOLOGY.

The etiology is unknown. Carcinoma of the larynx is much more frequent beyond the age of 40 (84 per cent.). Out of all cases published 39 per cent. occurred between the fifth and sixth decade of life, which is the most dangerous period. It is six times more frequent in men than in women. The disease is fortunately rare. Gurly in his tumor statistics, pointed out that out of all carcinomatous growths only 0.5 per cent. are located in the larynx.

THE THREE STAGES OF THE DISEASE.

Three stages of the disease are described:

Intrinsic Carcinoma.—1. In the stage of irritation there exists chronic hoarseness, which, according to Gerhardt, when occurring without cough in old people always suggests carcinoma of the larynx. Paresis or paralysis of one cord may also be present.

2. The ulcerative stage will be accompanied by fetor, cough, expectoration of muco-purulent, bloody, necrotic masses, and beginning dyspnea. We may or may not have pain either spontaneously, or on coughing or swallowing along the auricular branch of the pneumogastric nerve, radiating to the ear and occiput.

Extrinsic Carcinoma.—1. Here the first noticeable symptom will be dysphagia. This soon increases, and at the same time dyspnea may be noticed.

2. In the ulcerative stage, the symptoms are the same as in the intrinsic carcinoma.

3. The third or cachectic stage is common to both varieties—due to the lack of food (dysphagia), lack of oxygen (dyspnea), and sleeplessness caused by difficult respiration and pain. Death ensues in about three years after the onset of the disease, sometimes rather suddenly from suffocation or aspiration-

pneumonia, sometimes slowly from cachexia and marasmus, due to the cancer and to the difficulty in taking food.

DIAGNOSIS AND PROGNOSIS.

I need not speak to you of the diagnosis, which has already been considered by Professor Ingals, but you should remember that macroscopic inspection is of more value in diagnosis than all other methods of examination, but do not forget that the reflected image in the mirror seldom reveals the full extent of the disease.

Microscopic examination of an excised particle of the new growth certainly is one of our best methods to clear up the diagnosis, but it is not infallible. Where it fails, and there is still strong clinical suspicion of carcinoma, we are justified in proposing and performing a laryngotomy. The diagnosis, however, is perplexing only in the early stages of the disease. The prognosis is hopeless without surgical intervention.

OPERATIVE TREATMENT.

According to our present knowledge, carcinoma should be extirpated wherever an operation is practicable. Carcinoma of the larynx may be extirpated by different operative methods.

1. *Endolaryngeal Operations.*—While benign tumors can usually be removed by endolaryngeal methods, and while even small malignant growths have been successfully removed in this way and the patients permanently cured, yet we must not put too much faith in such methods in operating on malignant tumors. We must always bear in mind that carcinoma is an infiltrating growth, infecting neighboring tissues which to the naked eye seem yet to be normal, and that it often spreads in the submucosa, leaving the mucosa healthy for a time at least. No doubt a skilful specialist will have good results if he sees such cases sufficiently early, but unfortunately this very seldom happens. Out of 640 patients—I quote from Sendziak—only 36 were treated by endolaryngeal methods with 25 per cent. absolute cures (3 years of observation), 14 per cent. relative cures (1 year of observation), 39 per cent. recurrences; in 22 per cent. the time of observation was too short or the diagnosis not absolutely established. All these cases came early under the treatment of skilful laryngologists and yet there were 39 per cent. recurrences. The following operative procedures must usually be preceded by a preliminary tracheotomy.

2. *Laryngotomy.*—We understand by this operation an incision, median or transverse, into the larynx through the skin with removal of soft parts only, not including cartilage. There exist at least 6 modifications of this operation. What are the results? Statistical figures may be annoying in a clinical lecture but they are instructive. Sendziak gives complete statistics up to 1894; to von Bruns we owe the figures from 1890-1898.

	1851-1894 (92 cases.) Per cent.	1890-1898 (60 cases.) Per cent.
Cured more than three years	8.7	18.0
Under observation from one to three years	13.0	18.0
Recurrence	53.3	28.0
Death from operation	9.8	15.0

That means bolder operating during the last decade, more cases, less recurrences, but also more deaths. All our big operations on the larynx must begin with a laryngotomy except where there is no doubt as to the bilaterality of the carcinoma. The larynx once split open and its interior laid bare for inspection and palpation—then only are we able to decide whether laryngotomy will do or whether we have to resort to partial or total laryngectomy. In the cases which may be treated by laryngotomy alone, the cartilages must be sound and no perforation must have taken place.

3. *Partial Laryngectomy.*—This, generally speaking, is a laryngotomy with more or less resection of soft parts and cartilage. It may be of half the larynx or more. There are different methods of doing this operation. The results are as follows:

	1876-1894 (110 cases.) Per cent.	1890-1898 (106 cases.) Per cent.
Cured more than three years	10.9	12.0
Under observation from one to three years	11.8	15.0
Recurrence	30.0	31.0
Death from operation	26.3	17.0

This means distinctly more cures and less death-cases within the last ten years, but the same number of relapses due to the conservatism of the surgeons, in cases that were already too far advanced for partial laryngectomy. Radicalism in doubtful cases is safest in all cancerous growths.

4. *Total Laryngectomy*.—This consists in removal of the whole organ, with or without the epiglottis, and perhaps some of the adjoining tracheal rings and part of pharynx and esophagus. We must resort to it in all the cases of circular carcinomata and in most of the cases where the growth has become bilateral. Here are the results:

	1873-1894 (188 cases.)	1890-1898 (81 cases.)
	Per cent.	Per cent.
Cured more than three years	5 8 { 12 7	8 6 { 26 0
Under observation from one to three years..	6 9 {	17 4 {
Recurrence	82 4	23 4
Death from operation	44 7	18 5

During the last decade there are distinctly more cures, less relapses and many less deaths. What has brought about this improvement? Most of the patients formerly died from aspiration-pneumonia or wound infection (primary and secondary) even long after the general establishment of antiseptic wound treatment. The aspiration-pneumonia was combated:

1. By operating with the hanging head (Rose's position).
2. By the various tampon-cannulas of Trendelenburg, Hahn, Koehler, and Gerster.
3. By suturing the stump of the trachea to the skin (Glueck and Zeller) instead of leaving it open in the wound.
4. By operating in the combined Trendelenburg and Rose's position and by keeping the patient in Trendelenburg's position for several days (W. W. Keen).
5. By loosening the trachea from the surrounding connective tissue, pulling it upward and suturing it to the epiglottis (if not removed), hyoid bone, lateral sides of pharynx (Foederl). This is an ideal operation where it can be done.

Phlegmonous inflammation of the wound has been most successfully prevented by closing the large pharyngeal opening (Bardenheuer). No longer saliva with its microbes could run down and infect the wound, and the external wound itself could be closed and very well drained in its dependent parts. By this method the patient can sometimes swallow immediately after the operation, although it may be more prudent to introduce a soft tube into the esophagus or resort to rectal feeding.

DEGLUTITION AND SPEECH AFTER OPERATIONS.

The restoration of the power of deglutition is of even more importance to the patient than restoration of the voice. After closure of the pharyngeal wound, patients are soon able to swallow, and if the sutures hold, nothing can enter the trachea. Before this plan was adopted patients were able to swallow solid and semi-solid food, but liquids would escape through the pharyngeal fistula into the trachea and cause cough, tracheitis or broncho-pneumonia.

After endolaryngeal operations, the voice will be more or less perfectly restored; after laryngotomy and partial laryngectomy, the voice will also usually return to such a degree that the patient can make himself understood. In Professor von Brun's celebrated case, the carcinoma affected one vocal cord. Ten years ago he removed it by performing a total laryngotomy—splitting open the larynx from the superior thyroid down to the trachea. A cord-like cicatrix formed at the place of the removed cord and the voice was restored so that the patient—a professor of clinical surgery—has ever since been able to deliver his clinical lectures.

After total laryngectomy the laryngeal voice is of course lost, but patients are able to whisper. Several different artificial larynges have been devised to overcome this difficulty, but most of the patients prefer whispering to carrying around such a rather cumbersome instrument. The whispering voice can be much improved by use, especially in the cases where the pharynx has been successfully closed. After the operative method where the trachea is stitched to the hyoid bone, and therefore opens into the mouth cavity, the patient not only has soon learned to swallow every kind of food, but has also developed quite a good so-called pharyngeal voice. By this method the patient also retains mouth and nasal respiration—a not unimportant physiologic function—while with other

operations tracheal respiration with its inconveniences and dangers is persistent.

THE PATIENT AND THE OPERATION PROPOSED.

Our present patient has an intrinsic carcinoma as suggested by chronic hoarseness for eighteen months without cough and no wasting of the body as would occur in phthisis. The laryngoscope and the histologic examination substantiate the diagnosis.

The carcinoma is bilateral, consequently partial extirpation is no longer admissible, unless it be by the Solis-Cohen operation. This method is better than a simple hemi-laryngectomy as it takes away a part of the laryngeal skeleton of both sides. Professor Ingals hopes that this more conservative measure is yet practicable. A laryngotomy will allow us to carefully survey the larynx and determine the full extent of the disease.

A preliminary tracheotomy through the third, fourth and fifth cartilages was done three weeks ago, and the temporary tracheo-bronchitis has subsided. In this case blood will be prevented from flowing into the trachea by the sponge canula of Hahn, which I prefer to Trendelenburg's canula. The rubber bag of the latter is liable to collapse, or to distend below the end of the tracheotomy tube so as to cause suffocation.

OPERATION.

After insertion of the Hahn canula, through which chloroform was administered, Professor Fenger began his operation by making an I-shaped incision, the upper transverse cut following the hyoid bone, the lower one a line below the cricoid cartilage. The vertical incision was made in the median line. The two flaps thus outlined containing the skin, superficial fascia and pre-laryngeal muscles were held aside. A curved needle was next passed under the hyoid bone, which was then pulled forward by a strong silk ligature. This brought the laryngeal region into strong relief, the thyroid, cricoid cartilages and trachea lying bared to view. The larynx was next opened in the median line, the thyroid and cricoid cartilages being split vertically and the thyro-hyoid membrane severed from the hyoid bone. At the anterior inferior angle of the right quadrilateral plate the thyroid cartilage was found very thin, and when touched with a probe broke down before it, yellow carcinomatous material in a state of fatty degeneration oozing out. This condition and the fact that the growth was found to have involved the anterior half of the other cord made Professor Fenger decide that total laryngectomy was necessary. He called attention to the fact that the laryngoscopic appearances gave no proper idea of the great extent of the disease. Though no enlarged lymphatic glands could be detected, he thought that the best course would be to follow the laryngectomy in about six weeks by an operative search for lymphatic metastases in the carotid and submaxillary regions.

The patient was now lowered into an extreme Trendelenburg position, the body being inclined at an angle of 45 degrees so that in addition to the tampon canula the position of the patient with the head downward made it impossible for blood to enter the trachea or for the saliva to flow into the wound. The patient's heart at this time began to beat very slowly and it finally stopped for a few seconds, but he was revived and the operation finished without further anesthesia. Contrary to the usual practice, Professor Fenger began the removal of the larynx by severing it from its attachments at its upper part, as this gave a better chance to treat the pharynx and esophagus conservatively because they could thus be brought into view and separated more carefully from the larynx. It also gave great freedom of motion to the larynx and made it possible to lift it from its bed and twist it so as to expose the lateral portions in order to reach the vessels at its side. These

were the superior laryngeal, superior thyroid and inferior laryngeal arteries. The vessels were divided between two artery forceps and each severed portion tied. Working downward in this manner on both sides the larynx was carefully dissected from the pharynx and esophagus and then drawn forward and removed from its attachment to the trachea.

After the larynx had been removed it was found that the growth had extended close to the base of the epiglottis, which had been left with the intention of using it for closing the wound in the pharynx. Because of the nearness of the carcinoma it was thought safest to sacrifice the epiglottis. The opening into the pharynx and esophagus was now closed by sutures from above downward, thus completely restoring the pharyngeal tube. The severed end of the trachea was brought out of the wound and stitched to the skin where the lower transverse incision met the median incision. The skin flaps were turned in and sutured, care having been taken that every nook and corner of the wound was properly drained. Hahn's canula was removed and the old canula replaced. No blood had entered the trachea around the sponge. Catgut was used for the ligatures and pharyngeal sutures. The knots were tied inside the pharynx. Moist boric acid dressing was used.

The recovery was uneventful, except that on the fourth day the esophageal tube was retched up by the patient and on the same day a communication formed between the pharynx and the wound from sloughing away of the anterior wall of the pharynx. This untoward event afterward prevented the patient from swallowing liquid food, which would escape through the pharyngeal fistula. Whether this fistula will close spontaneously in a few months or be closed by a plastic operation remains to be determined.

Dr. Fenger concluded that it would be better not to use a permanent esophageal tube for feeding, but to nourish the patient by rectum for a few days and afterward to teach him to swallow liquids, for this purpose using sterilized milk, or if this did not succeed an esophageal tube should be used for a time at each feeding.

34 Washington Street.

DISCUSSION.

DR. T. R. CHAMBERS, Jersey City, N. J.—I wish to speak of two points. The first is the assertion made that when you have cancer you must take it away. I think that is liable to be misunderstood. Personally, I think I would rather die, if I had cancer of the larynx, than to have to suffer with the growth only partially removed. Its return would mean a great deal more agony to me than the few months or possibly only a few hours of life after a major operation like laryngectomy. The Doctor then says that a major operation on the larynx must always be preceded by tracheotomy. I do not know whether he considers an excision of the epiglottis near its base as a major operation, but last Friday I removed the epiglottis at its base for cancer of the epiglottis and the patient did very nicely, although no tracheotomy was done. I think I would remove cancer in its very incipency, if possible.

DR. O. T. FREER, Chicago—Dr. Fenger did not advocate tracheotomy as a preliminary to all total or partial laryngectomies, but advised it where there is uncertainty as to the extent of laryngeal carcinoma, that is, in those cases where partial laryngectomy or laryngotomy may perhaps suffice to eradicate the disease, and preliminary laryngotomy is therefore done to determine whether the larynx may be in part preserved or needs total removal.

Where total laryngectomy is contemplated from the start and dyspnea is not urgent, it is better to remove the unopened

larynx without preliminary tracheotomy, as this creates a suppurating wound with surrounding inflammation, and a cleaner, neater dissection can be done without it. In addition, the presence of a tube in the trachea leads to coughing fits that add to hemorrhage and interrupt the operation. In total laryngectomies of this type it is better, therefore, not to open the trachea or larynx at all. In distinction to this, partial laryngectomy, even if merely contemplated as a possibility, necessitates laryngotomy and consequent bleeding into the lumen of larynx and trachea. This hemorrhage may be severe and hard to control, while that occurring in total laryngectomy is easily arrested and reached. It is therefore well to insert a sponge tampon canula into the trachea in cases of contemplated partial laryngectomy, though it is not a necessity, as Rose's position will usually answer to keep the trachea free from blood. The tampon canula insures against aspiration of blood upward into the trachea and its clotting there and makes the extreme Rose's position unnecessary, and this is an advantage, as the position with inverted head adds much to bleeding and is uncomfortable for the operator.

Cocain is always to be first applied to the trachea through the tracheotomy wound to avoid the coughing due to the presence of the tampon canula.

DR. NORVAL H. PIERCE, Chicago—I think it is important in all cases to do a preliminary tracheotomy before either a partial or complete removal of the larynx. Not only does this give us breathing space during the operation and prevent the entrance of blood into the larynx, but in the after-treatment the discharges are cut off from the trachea, and thus the most frequent cause of death, aspiration pneumonia, is largely avoided. I have seen Fenger perform the operation three times, and in all of those cases he made a preliminary tracheotomy.

I would like to put on record a case which illustrates very nicely the difficulty of diagnosis of carcinoma of the larynx in its early stages. A Canadian clergyman was stopping in the city, and a friend advised him to consult me regarding a hoarseness which had lasted some six months. He was obliged to give up his work because of this hoarseness; his physician advising rest as a cure. The laryngeal picture was as follows: On the right cord below its surface was a nodule, pinkish in color, but well defined, with no induration around its base and no redness of the cord, except possibly a slight pinkish color of the upper surface above the growth. It was the size of a small split French pea or even smaller. I removed this growth as well as I could through the natural way, and was surprised, on microscopic examination, to find evidences of sequestration of epithelial cells. This case, immediately after the operation, assumed a malignant character. The induration increased so that after five days the entire picture was changed, the hoarseness was greatly increased, and it came to the point where I advised him to have an external operation performed. Greatly shocked, and not at all friendly toward me, he returned to his home in Canada, where I have heard that he is steadily going down. Now here is a case in its incipency where I was misled in my diagnosis, thinking it to be a simple papilloma, and I am sure no one could have made the differentiation by the microscopic appearance at that time.

DR. PETER J. GIBBONS, Syracuse, N. Y.—I notice in the abstract that the patient was able to speak. I did some work registering on the phonograph the voice of Dr. Solis Cohen's first case. I registered on the cylinder of the phonograph what he could say and how it sounded and repeated the examination every three or six months or a year. At the meeting in Philadelphia I reproduced them. I have used the phonograph to register other cases since then, and I have come to use it frequently. In a case in which a physician was sued for malpractice for the removal of a tonsil, I used the phonograph for the registering of the voice, which won the case for the doctor. By registering the voice of the patient on the phonograph, we encourage other patients, who can hear the records when an operation is contemplated. The patient will often consent to an operation when he would not, prob-

ably, if he did not hear the reproduction of the voice. It is a simple matter to register the voice in this way.

DR. E. FLETCHER INGALS, Chicago—In reference to whether carcinoma should be operated on or not, I simply gave the late Professor Fenger's views. I am, personally, heartily in sympathy with what the Doctor said; I should not usually have laryngectomy done for carcinoma. In all my experience I have only seen a single case in which laryngectomy seemed to me justifiable, and that was the one here reported. In the presence of cancer I believe the majority of cases will live longer and more comfortably without laryngectomy than with it. Professor Fenger believed that tracheotomy was not desirable in some cases. In this case I had done tracheotomy myself beforehand, without consulting Dr. Fenger about it. The case referred to by Dr. Freer was operated on by what is sometimes called Keen's operation, without a previous tracheotomy. It is turning out very satisfactory, and if other cases do as well, preliminary tracheotomy would not often be necessary.

THE ASCH OPERATION FOR DEVIATIONS OF THE CARTILAGINOUS NASAL SEPTUM: WITH SOME CONDITIONS COMPLICATING ITS PERFORMANCE.*

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There are many varieties of deviation of the cartilaginous nasal septum. In some the occlusion is complete, in others partial, some are high up while others are close to the floor. In some there are adhesions resulting chiefly from previous attempts at their cure, principally caused by the use of escharotics, while in others the deviation of one side is associated with a dislocated columnar cartilage on the other, making it S-shaped; and finally diseased conditions may lurk behind the obstruction. The bony septum is likewise deviated at times.

The record of a few of the complications of septal deviations is here presented.

CASE 1.—J. W., aged 17, was sent to the New York Eye and Ear Infirmary by one of our well-known laryngologists. His cartilaginous septum was deviated to the left. Occlusion was nearly complete, while on the right the columnar cartilage was dislocated, almost completely closing that side. His right nostril operated on by a dissecting operation with excision of the protruding end, the mucous membrane stitched together and in a fortnight the parts had healed firmly and a free current of air established on that side, thus relieving the dislocation of the columnar cartilage. Subsequently an Asch operation was performed and the result was a straight septum with perfect respiration.

CASE 2.—E. S., male, 26 years old, suffering from complete obstruction of left nostril and periodic attacks of hay fever. The main points of an unusual nature in this case were the complete occlusion and many points of adhesion of the cartilaginous septum to the inferior turbinate and the exceeding thinness of the septum. Escharotics had been formerly applied. In this case a perforation resulted, but the breathing is free and unobstructed and the improvement in health marked.

CASE 3.—Patient of Dr. C. S. Bull; male, aged 28; had applied to him for relief of a marked bulging of the left eye. The vision being normal, the bulging being prominent in the temporal and infraorbital regions, the diagnosis of an extrinsic tumor was made, which evidently caused the bulging. His nose was found to be obstructed, and at Dr. Bull's request I examined him. A complete deviation of the cartilaginous septum was found and it was utterly impossible to make any intranasal examination. I advised operation of his deviation to enable further examination, as a means for diagnosis. He

was found to have a mitral regurgitant murmur and hence no anesthetic was given. Under cocain the Asch operation was performed and the result eminently satisfactory. A free field was opened for examination and no further intranasal obstruction found. With the restoration of breathing the bulging of the orbit diminished to a great degree, though it was still pronounced. The diagnosis of an osteoma of the orbital cavity was then made. The patient feeling so comfortable was averse to any operative procedure on the orbit and so was Dr. Bull.

A further series of cases might here be added for the relief of the bony deviations that occur so frequently. In all of these, however, the trephine, or the crushing instrument devised by Roe seems to be the most valuable of the means at hand, for details of which we refer to the writings of the originator.

In considering the accidents reported following the Asch operation we note that Robert Levy reports a case of death subsequent to the Asch operation, the cause of death being acute meningitis. The patient was an opium habitué, and his general condition so poor that any operative procedure would tend toward a fatal result, hence this operation could hardly be said to be the real cause of death in this case.

Stucky records injury to turbinates on the deflected side. The thought occurs, in trying to find a reason for the possibility of this, that the dull blade which is always introduced on the deflected side might have been made sharp by the instrument maker, otherwise its occurrence seems most difficult of explanation.

In a recent article on the "Correction of Deflections of the Nasal Septum with a Minimum of Traumatism," a new operation is presented, and the writer proceeds to demolish that of Asch. "Asch's procedure," says the author, "is intended to accomplish by force under narcosis in a few minutes, *without the aid of sight*, a result which can be attained only by the use of much more time and with the infliction of some pain by rhinoscopic methods."

As to the force required in the Asch operation, let us compare the writer's own method with that of Asch. The writer advocates the forcible removal of exostoses and crushing by means of the Roe forceps in an operation whose duration may be from thirty-five minutes to one hour and a half, under the local anesthesia produced by cocain in powder.

Asch cuts the cartilage in full ether narcosis, uses powerful compressors in the same unconscious state. Can any rhinologist picture the former method as being the gentler one? The most stoical of patients will surely moan as the former manipulations are being made, while the less determined will give vent to shrieks of pain of a heart-rending character as the crushing process is being performed; others again will go into collapse and give us a serious hour or two, if nothing more, from the action of cocain on the heart.

On the other hand, what surgeon hesitates to use force under ether to reduce a dislocation, to refracture a poorly-united bone, etc.? For this, anesthesia is humanity's boon and force can surely not be considered as an objection.

My own statement that "the Asch operation is one of magnitude" is quoted. The remark was made by myself in pleading for general narcosis and rest in bed and not as regards traumatism. The following instance, I am credibly informed, is by no means an unusual one:

Vigorous male, aged 32, septum deviated to right. Asch operation under cocain; tubes inserted and patient allowed to go home in an hour. Three hours later he was found exhausted and exsanguinated and hurried to a general hospital

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, C. R. Holmes and G. H. Makuen.

in an ambulance, where his tubes were removed, his nose packed and the bleeding checked.

When, at the end of a week, he left the hospital he had some pronounced views, let us hope, on the question of resting after such an operation.

I still hold the views formerly expressed; in one instance operation was delayed for over a year because I insisted on anesthesia and at least three days' rest. The patient finally consented, and has been grateful to me ever since for considering the operation of sufficient magnitude to require this.

The writer uses the words "without the aid of sight" as indicating the manner of operating, and here I must seriously challenge him to produce one single line from either the writings of Asch or of myself, or from the very clear description given by Shurly, Ingals, Coakley and others in their text-books as indicating that this operation should be done in such a manner. Indeed, the first great care is to have the broad light from a window, either direct or reflected, or else a properly shielded electric lamp; the Asch operation is done no more without the aid of sight than is an operation for adenoids or than with the Roe forceps, which I employ.

There are no two opinions regarding the question of the purpose of the Asch operation. It deals with the cartilaginous septum only. The bony septum can and always is cared for by means within our command.

As to the use of tubes after the operation: in the earlier operation packing was indulged in. This was very distressing to the patient and the tubes were the ultimate result of our efforts to support the broken septum in a proper position until the parts were firmly knit. In the hundreds of cases seen by me I know of few real complaints about the tubes—surely a few granulations can have no terrors to a skilled rhinologist—one sweep of a curette will end that. Compared to the comforts obtained, as against packing, of a properly fitting tube, there can be no doubt whatever.

That the Asch operation is of "growing popularity" is not due alone to the rapidity of its performance, but surely also to the results attained. To present the names of those who perform the operation to their own satisfaction and that of their patients would be to call a roll of many of those distinguished in their profession as rhinologists. To say that these advise and practice its performance because it is so simple a matter and not because it is in their opinion of the greatest good to their patients; is to make an unwarranted statement, to attack their intelligence and their surgical skill. Results and these only must count. Furthermore, no operative procedure, however simple, is free from unforeseen and unlooked for complications, nor has there been any operation ever devised that will answer for every kind of deformity; nor can any operation hope to become popular which rests on the basis of attacking all others. In neither Asch's statements nor my own have other methods been attacked; it has sufficed us to say that the vast majority of deviations may be successfully cured by this method, and an experience of twenty years fully justifies that assertion.

The last word regarding any operative procedure is never spoken; the more popular it becomes the more frequently it is mentioned and assailed.

By our own mishaps and those of others we learn to avoid these and perfect our technic. Intelligent and fearless criticism is cordially welcomed, and it becomes incumbent on us to weigh these carefully and to answer them as best we may in the same cordial spirit.

25 East Seventy-seventh Street.

DISCUSSION.

DR. O. T. FREER, Chicago—I am the author referred to by Dr. Mayer. It is possible that, in my enthusiasm for the operative method advocated by me, I criticised the Asch operation with undue severity in contrasting it with my own mode of procedure. The operation that I prefer is that of the window resection, as it is named by Krieg, who was the first to give it a detailed description. Not knowing of the writings of Krieg and Bönninghaus on the subject. I developed the operation independently in the course of my own work, as it seemed to me the most natural and proper one for a structure like the septum. The details of my method, therefore, differ somewhat from those of Krieg's proceeding, and much of my instrumentarium is original; both are described in my article in *THE JOURNAL* of the American Medical Association, March 8, 1902. Since this publication further experience has led me to make improvements which I hope to describe at some future time. The essentials of the method remain unchanged, however.

The resection operation consists in the removal of the cartilage and bone between the layers of mucous membrane lining both sides of the septum to the entire extent of the deflection. It is my experience that deflection of the bony septum usually continues that of the cartilaginous portion and that if the latter alone be straightened the patient will get but partial or no relief. The usefulness of the Asch operation is limited to the cartilaginous septum, therefore if the cartilage be straightened by it and the bone behind it be deflected or an exostosis be present this must be removed by a second later operation.

I agree with Dr. Mayer's objection to the Roe forceps. I included it in the instrumentarium described in my article, but further experience has led me to discard it. As Dr. Mayer has stated, the instrument often inflicts great pain, and for this reason and because it is impossible to tell with all fracturing procedures whether the break will occur in the desired place or not I have discontinued the use of the Roe forceps. In elastic septa it often failed to fracture at all, and sometimes would displace fragments in unexpected and undesired directions. Instead of fracturing, therefore, I now cut away all of the bony deflection as well as the cartilaginous. For this purpose I use cutting bone forceps, Gruenwald's strong nasal scissors, trephines and the chisel. A light, sharp chisel, with long bevel, impelled gently with light taps of a dental mallet will not fracture the septum beyond the field of operation. The instrument must simply be proportioned to the strength of the structure to be operated on. The use of a heavier chisel and mallet with strong malleting would be disproportioned to the resisting power of the septum and might break it. The light chisel cuts bone like a knife.

Dr. Mayer's description of the suffering I inflict on my patients has made me feel very sorry for them. The fact is that many of them chat with me while the work progresses and they often tell me that the resection of the cartilaginous part of the septum is quite painless. Trephining and cutting the bone causes more pain, but nothing that children of 12 and 14 have not borne without much complaint. Cocain anesthesia, therefore, makes the resection operation one of such slight suffering that I now boldly tell my patients that they will have but little to endure. All fracturing, however, or attempts to push over portions of the septum cause severe pain, as it strains distant portions not under the influence of the local anesthetic.

Faintness, as I have explained in my paper, seems associated with the first terror due to anticipation of the operation, and has invariably passed off in my experience after the work has gone on for a few minutes. It is not due to cocain, as in spite of the continued use of this drug, the faintness disappears.

The septum is a partition that consists of an elastic spring, the quadrangular cartilage, in front and a stiff bony plate behind. Less injury is done by complete exsection of the buckled part of this elastic spring than by attempts to force it into a straight line by its infraction. It takes greater force to break elastic than it does to break brittle substances, and

the result is apt to be imperfect. I therefore, from experience, ceased to attempt to deal with cartilaginous septal deflections by attempting to deprive them of their resiliency and relied on cutting them out as the most certain and mildest method. The cartilage or bone removed is of no physiologic importance, providing the mucous membrane be retained. It does not interfere with the support of the external nose. I have proven this often by extensive resections of the cartilage. Krieg has proved it, Benninghaus has also done so, as also have others. The accidents following the Asch operation are few and most of them may be due to chance, but I do not believe that it is as safe as the resection operation.

Dr. Mayer says that he uses sight in doing the Asch operation, and I apologize to him for stating that he does not. Nevertheless, I do not think that the Asch operation can be regarded as one where vision gives much aid, for, though the cutting may be done rhinoscopically, the fracturing certainly can not, and after the first cut the bleeding is too great to admit of useful vision.

The tubes employed in the Asch method are mildly irritating foreign bodies and, while usually harmless, are a source of discomfort and better dispensed with. After packing the naris for 2 to 5 days to avoid secondary hemorrhage, nothing is placed in the nasal fossa after the resection operation, as the naris operated on stands wide open, the deflection having been bodily removed.

The view of the interior structure of the septum offered me by complete excision of the deflection has shown me that deflections with walls of even, or nearly even, thickness are commoner than those with thickenings or exostoses. Many of the deflections, if merely sawed off by me, would have left in my mind the impression of exostoses.

One of the chief merits of the resection method is the fact that by it all of the deformity, bony and cartilaginous, may be removed at one sitting, radically and for all time, so that secondary operations are not needed.

There is no variety of deflection, whether thin or thick, complicated with exostoses, or echondroses or not, that can not be radically corrected by means of the resection method. It can not be done under a fixed rule, and the operator must be capable of modifications to suit the case and must have a sufficient assortment of instruments to cope with unusual obstacles, but if he gives heed to these conditions he will never fail to give the patient perfect breathing through the obstructed nostril when the operation is completed.

DR. C. R. HOLMES, Cincinnati—I would like to ask the Doctor if he uses the mallet and chisel.

DR. FREER—Yes.

DR. HOLMES—I do not understand the Doctor's method, and I would like to have him send me his reprints. I am afraid of chiseling on the bony septum. My lamented friend, Dr. Thorner, had one sad case in Cincinnati, where the use of the chisel was immediately followed by affection of the brain, and it was supposed that the death of the man was due to a fracture caused in this manner. Is it possible that drills can do the work?

DR. FREER—The trephine can do the work.

DR. HOLMES—Well, if the trephine could do the work, I think that would be much safer. If you study the skull, you will see how easily fracture may be caused, so that I would hesitate to use the chisel on the bony septum.

DR. C. F. THEISEN, Albany, N. Y.—In the cases in which the Doctor has to practice dissecting off the septum possibly back to the posterior nares, as he says is necessary sometimes, how is the nose supported?

DR. MAYER—The cartilages hold it in place.

DR. THEISEN—What if the individual receives a blow on the nose?

DR. MAYER—The cartilages will spring back the same as before.

DR. THEISEN—If the patient is under ether the operation is soon done and, in my experience, the patients do not complain of wearing the tubes after the first few days. They readily take out the tubes, cleanse them, and re-introduce them. In only one case have I had any trouble, and that was

a case in which there was a small perforation before the operation. A small perforation resulted from the operation in one other case.

DR. P. J. H. FARRELL, Chicago—I have frequently performed the Asch operation and have been well satisfied with my results. I had the pleasure of hearing Dr. Freer read his paper on the operation devised by himself. I also have seen a number of cases after operation and the result in each case was very satisfactory. I will adopt the Freer operation in a series of cases on my return and will then have practical knowledge of both methods of operating for deviations of the cartilaginous nasal septum. I confess that I can see no good reason to quote men just simply to agree with them. I find it more instructive and interesting when an essayist has the courage to disagree with other writers. We all know that many of the papers read at medical meetings are simply a compilation. The bibliography frequently takes up more space than the subject itself.

DR. G. McAULIFFE, New York City—Any discussion in reference to the bony portion of the septum should not be included in the discussion of the paper. Asch deplored the fact that his instrument was so badly manufactured and so poorly understood. The inability to get an exact right angle cross-section and the fact that the instruments are sometimes made with sharp points, will account for many unpleasant experiences. You can never make a straight line out of a curve, and I have found subsequently, after the Asch operation, there is a spur of bone in the lower portion, which necessitates subsequent sawing. As to the question of gentleness, if the operation is done thoroughly, the force necessary to run the finger up and break up the triangles (and it is necessary to break them up or they will spring out again), this procedure alone precludes the possibility of very great gentleness. But if the Asch operation is followed out according to its indications the result is good, except that you may have a spur to deal with subsequently.

DR. J. C. BECK, Chicago—I suppose the Doctor referred to me with the other men, for I told him that I did this operation. I attempted the operation on a man with a deflected septum very anteriorly. It was an ideal case clinically for the operation. In this particular case the operation was not difficult, and I used Adams' straightening forceps. The result was very good.

DR. J. E. BROWN, Columbus, Ohio—It seems to me this ought not to be a question of antagonism between, but simply a choice of operations. We have here two operations, each with excellent features to recommend it to the surgeon. In a field of work much more limited than that of either of the essayists I have seen cases that I felt were not adapted to the Asch operation, and I have studied with much interest the method of Dr. Freer, and believe that in a certain line of cases it is to be preferred to the Asch operation. Under general anesthesia this latter is certainly not brutal, but the use of general anesthesia is certainly necessary for its satisfactory performance. I have twice made the operation under cocaine, both times in the hospital, and it was in each case followed by more reaction than usual, and considerable prostration. In one case acute follicular tonsillitis appeared following the operation. I would hesitate very much before trying the operation again under cocaine. Since the publication of Dr. Freer's paper I used his method in two cases. I was able to complete it with only a slight faintness on the part of the patient, and there seems to be no more pain than in any operation for the removal of a septal ridge. In one of these cases where there was a deflection of the bony septum, instead of chiseling above and below as described by the author, I used the Hajek chisel, removing the apex of the ridge.

In regard to perforations following operations for deflected septum, I should like to hear from some one who has seen bad results from these. In response to a question on this point to Prof. Moritz Schmidt of Frankfort, he said he had never seen bad results from such perforations, and that in some cases he would feel no regret from having them follow. It would seem that where the deviation is not perfectly corrected a perforation might be a conservative factor.

DR. EDWIN PYNCHON, Chicago—In his discussion, Dr. Freer said he often found simple deflections, but my experience has been the opposite. There is, in my experience, almost always more or less thickening. The occasional unfavorable results from the Asch operation may, I think, be due to such thickening. It is advisable to first reduce the thickened deflection to a simple deflection. After doing the Asch operation, which I have done on several occasions, I find it necessary to do one or more minor intranasal operations in order to destroy the little ridges produced as the result of the Asch operation. I have not done this operation under cocain, but I shall do so. An occasional perforation will follow the Asch operation, but it in no way differs from perforations found at other times and from other causes. A small perforation here is not a source of annoyance if the septum is perfectly plain about it. The reason a perforation produces irritation is because there is a thickening of the septum posterior or superior to it. I have sometimes removed the thickenings in such cases and found the perforation caused no further trouble.

DR. G. HUDSON MAKUEN, Philadelphia—After reading Dr. Freer's original paper I resected the greater portion of a cartilaginous septum that was dislocated and protruded from the vestibule of the nostril for about half an inch. Not having all the instruments Dr. Freer describes in his paper, and perhaps owing to less skilful manipulation, I made a perforation at the junction of the skin with the mucous membrane fully half an inch long. I was surprised when I found it there, but it closed up fully by first intention, and I doubt if anybody, by looking into that nose, would know that any operation had been done.

DR. KATE W. BALDWIN, Philadelphia—One word in regard to local anesthesia in the Asch operation. Cocain, menthol and carbolic acid, equal parts, as an anesthetic enable one to do the Asch operation entirely satisfactorily without general anesthesia. This combination is a very strong local anesthetic and must be used more sparingly than cocain alone.

DR. EMIL MAYER, New York City—Dr. Farrell's point is well taken, and I shall omit all personal reference to Dr. Asch in the paper before publication. I felt that I owed an apology to the section for again presenting my views on this subject.

Regarding Dr. Freer's methods, I would like to say that dissections have been done ever since any operations were attempted on the nose. I must take issue with the statement that deviations of the cartilaginous septum are practically always associated with bony deviations. In the specimen which I here present and which I have just taken from Dr. Cryer's exhibit before you, you will see deviations of the cartilage with perfectly straight bone.

Dr. McAuliffe has called attention to the need of some slight operation being required after the deviation has been relieved. This does occur and is simply due to the anatomic conditions present. It is a mistake to believe that the septum is all of one thickness. It is broadest at its junction with the maxilla and, hence, after operation, we have a thickened base to relieve. This is done as though we had an ordinary enchondrosis to deal with.

Dr. Freer, in his original paper, said that he used Roe's crushing forceps and, hence, I made the comparison between the exquisite pain of that method and that of the Asch forceps. I protested against the statement that we work in the dark. The final outcome of all discussions on this subject will be that such operation will be chosen as best suits the individual case and with such methods and results with which the operator is most familiar.

A Preservative Solution.—J. A. Shellenberger of Philadelphia says in the *Philadelphia Medical Journal* concerning the best solution for keeping pathologic specimens: Some years ago I preserved a goodly number of specimens very satisfactorily in the following solution:

R. Chlorid of sodium	5iv	120
Pulv. alum	3v	150
Hydrarg. bichlorid	gr. ii	
Aq. Pur.	Oii	960
		12

M.—In very delicate preparations use double the amount of water.

RECURRING MULTIPLE ANGIOMATA OF THE SEPTUM.*

JOHN O. McREYNOLDS, M.S., M.D.

DALLAS, TEXAS.

It is not my purpose at this time to present an exhaustive study of the literature of this affection, but only to report an interesting case which is now under my care, together with the treatment I have employed and the comparative failures that have followed, in the hope that the wider experience of the members present may aid me in the more successful management of an exceedingly obstinate trouble.

The patient, Mr. L. L. K., a young Jewish merchant of Dallas, is 32 years of age; and aside from his nasal disease is in perfect health, and gives no history of any serious illness or constitutional infection that would have any bearing on the subject. He reports that his mother for many years was subject to repeated very severe attacks of nasal hemorrhage that resisted all efforts at relief by very competent physicians. She finally died of some unrelated intercurrent affection.

Our patient is about six feet tall, weighs about 160 pounds and is rather pale in appearance. The general conformation of the nose is that which we so frequently observe among the Hebrews, but the type is not exaggerated and the contour would be considered normal. His habits as regards tobacco and alcohol are exceptionally good, and he is not addicted to any form of dissipation to my knowledge.

The interior of the nose, on inspection, reveals a fairly normal state of the turbinated tissues, and the structures about the nasopharynx are in good condition. But on each side of the cartilaginous septum, when the nose has not been recently subjected to any form of treatment, are a few very dark blue elevations, each about the size of a pea. They are discrete, rounded in shape, and are most numerous in the anterior superior portion of the septum. They are composed almost entirely of blood vessels apparently of the venous type and they do not resemble in color, contour or behavior the granulation tissue which we see following operations on the septum. In fact, they are little blood tumors, and on the very slightest provocation and many times without any discoverable reason, they will break forth without warning, and for an hour or more will bleed furiously, until the loss of blood is at times very great.

So far, we have not been able to find any marked alteration in the character of the blood itself and there is nothing like a general hemorrhagic tendency. Wounds in other parts of the body proceed in the normal way, and in other parts of the nasal cavity there has never developed any disposition toward hemorrhage. After a period of bleeding these little tumors are somewhat collapsed, but they soon fill up again, and by the following day they are again ready to repeat the process. Generally the bleeding is unilateral, but sometimes it is bilateral, and it occurs most frequently when bending forward or under the conditions which would exaggerate any ordinary epistaxis.

With regard to the treatment we have employed, looking to any possible constitutional background, we have administered a long line of alteratives, tonics and astringents in succession, and at different times, but without any appreciable results. For the local condition we have used all the most important chemical astringents and caustics in modified form, and with some degree of success. But by far the most useful agent that we have so far employed was the electrocautery for the complete destruction of the tumors and their tributary blood vessels immediately around them. This will effectually prevent the hemorrhage for a few weeks, when the patient again presents himself with another series of tumors demanding obliteration. More recently I have been using electrolysis in the region of recurrence, hoping that in this way I may be

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, C. R. Holmes and G. H. Makuen.

able to hold permanently the ground which I can always temporarily secure by the employment of the electrocautery.

Now, gentlemen of the Section, if you have any ideas to advance that will contribute to the permanent relief of this affection I wish to assure you that your suggestions will be most gratefully received, and due credit will be entered to your account in the future management of the case.

MERCURY IN SYPHILIS:

ITS ADMINISTRATION HYPODERMICALLY IN CONTRAST
WITH OTHER METHODS.*

EUGENE FULLER, M.D.

NEW YORK CITY.

The question of the part played by mercury in the management and cure of syphilis is outside the sphere of the present paper. In fact, that question has long ceased to be a burning one, the potency and efficacy of mercury in this connection being admitted by all sane, honest and educated opinion. The relative value in the treatment of this disease of mercury and the iodids and the scope of each, although subjects of importance, will also not be here discussed.

The object of this communication is a consideration of the therapeutic methods of administering mercury, the rules to be observed in the employment of these methods, the relative advantages of each and the great importance of their proper adaption to individual cases.

ACCESSORY TREATMENT.

As a prelude to this discussion, however, the importance on the part of the patient of the observance of certain general rules tending to make the system tolerant of mercury, no matter how administered, should be duly emphasized. The most important of all these is the existence of a normal and cleanly condition of the teeth and gums. Decayed teeth should be filled or extracted, tartar removed and any defects at the line of junction of the gums with the teeth remedied. Careful brushing of the teeth and the use, twice daily, of a peroxid of hydrogen mouth wash is in all cases most essential. Oftentimes it is impossible for a person who maintains the mouth in a foul condition to tolerate mercury in sufficient quantity to stay the progress of syphilis. The avoidance of alcohol, the ingestion of an abundance of nutritious food, the observance of hygienic conditions and the regulated practice of physical exercise are other general rules, the following of which should be insisted on.

THE METHODS OF GIVING MERCURY.

There are three general and usual methods for the therapeutic administration of mercury, namely, by the mouth, cutaneously and hypodermically.

Administration by the mouth is the common method, and if judiciously so given the drug satisfactorily accomplishes its purpose in the majority of instances. There are many forms in which mercury by the mouth is administered. The metal in its natural state as pill-mass or as gray powder can be prescribed or one of the various salts of mercury can be given. Metal mercury salivates rather more readily than do the salts. If a person is naturally prone to looseness of the bowels, pill-mass, for instance, would be of little use, as its administration, even in small doses, would be apt to so accelerate the bowels that little or none of it would be

absorbed. In a subject of naturally bilious or constipated habit the drug so given may be of special value, since, besides producing its constitutional effect, it also corrects the function of the bowels. Among the salts of mercury the bichlorid, the biniodid and the protoiodid are perhaps the most frequently prescribed. The bichlorid has comparatively little effect, as a rule, on the bowels. To be tolerated by the stomach it should be taken when that organ is full, and it should also be swallowed in conjunction with a rather long drink of water. Bichlorid of mercury to the amount of $\frac{1}{8}$ grain three times a day can, in many instances, be well tolerated. In most cases the initial dose of the drug should be $\frac{1}{20}$ to $\frac{1}{16}$ of a grain, from which starting point the size of the dose should be increased. Some stomachs will not tolerate this salt. Where this form of mercury is pushed beyond the toleration point and where the stomach does not rebel a mercurial tremor is apt to be observed. Many of the preceding remarks apply to the biniodid, although I am not inclined to give that salt in quite as large doses as the bichlorid. The protoiodid is a salt much used and variously commented on. In the experience of many it is found too irritating to the bowels to be tolerated in a sufficient amount to overcome or even stay the progress of syphilis, provided the disease shows any evidence of activity. In my experience most brands of protoiodid made in this country are too irritating to be of value, small doses producing colicky pains and loose bowels. French imported protoiodid is much milder, and of this many times a patient will be found capable of tolerating $\frac{1}{2}$, $\frac{3}{4}$, or even $\frac{5}{6}$ of a grain three times a day before the bowel symptoms develop. Protoiodid is a safe form of the drug, as it shows little tendency to salivate, the explosive bowel symptoms being the usual evidence that the dose limit has been reached. With this salt, as with the bichlorid, the initial dose should be small, the maximum one being reached by a gradual progression. Little of a descriptive nature need be said regarding mercurial inunctions and fumigations. When more mercury than the system can tolerate is by these methods absorbed, mouth symptoms, chiefly in connection with the teeth and salivation, manifest themselves. Therapeutically the cutaneous methods are, as a rule, efficacious. The chief arguments against them perhaps lie in the time they consume and the discomfort and uncleanness they occasion, together with the publicity which may be not only associated with their administration at special establishments, or by attendants, but also caused by the continual soiling of the body and underclothing.

THE HYPODERMIC TECHNIC.

As the administration of mercury hypodermically is of somewhat recent origin, and as its therapeutic use in this manner is still restricted to the practice of comparatively few surgeons, it may be well to devote some special remarks to the technic of this form of treatment. In the first place, mercury so used can be administered as an aqueous solution of a salt or as an insoluble salt suspended in an oily medium. The medication should not be injected subcutaneously, but intramuscularly and deeply in connection with thick fleshy structures. The gluteal region represents the part best suited for these injections, care being taken not to involve an area so low that the sitting posture subjects it to direct pressure. If a soluble salt of mercury is to be employed the corrosive chlorid is to be preferred dissolved in a normal aqueous salt solution, each 10 to 15 m. of the solution containing $\frac{1}{4}$ grain of the mercurial salt. The presence

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of the corrosive sublimate insures the sterility of the solution. As much as $\frac{1}{4}$ grain of the corrosive sublimate can be injected daily or $\frac{1}{2}$ grain every two to three days. In commencing treatment, however, it is not well to make the initial doses as large as these until the tolerance of the individual to the drug is established.

Calomel suspended in sterilized olive oil is the form in which the insoluble mercurial salt was injected in the early experimental days of the treatment. Although the systemic mercurial effects from such injections were marked, still they were very unsatisfactory, owing to the painful local after-effects produced, many patients being rendered so sore in the gluteal region as to be in a large degree crippled for a week or so, while in a few instances actual abscess formation resulted. These disagreeable effects resulted chiefly from two causes: the difficulty in keeping a vegetable oil in a sterile condition and, to a less degree, to the natural irritating quality of the calomel. The substitution of liquid petroleum products in the place of olive oil worked a great change for the better in this method of treatment. Liquid vaselin, albolene and benzoinol are some of the names given to these petroleum derivatives. At the present time calomel is by many still employed suspended in one of these latter preparations, and the results reported from it when so used are satisfactory. Another mercurial salt, insoluble in oil, which has to a considerable degree supplanted calomel in this connection, is the salicylate of mercury. The salicylate is a powder which closely resembles the mild chlorid in gross appearance. The therapeutic strength of the two when employed in this manner is also identical. The salicylate is supposed to be the less irritating. As the result of much personal experience I have adopted it as the form of mercury I generally employ when using the drug hypodermically.

The ordinary full dose of the insoluble salt so injected is $1\frac{1}{2}$ grains. This amount can be given in 20 minims of the oil. Twenty-four grains of the salt in $\frac{5}{8}$ i of the oil would make a mixture every 30 minims, of which, when well shaken, would contain $1\frac{1}{2}$ grains of the salt. The syringe to be used should be one of $\frac{5}{8}$ i capacity, with a needle about $1\frac{1}{4}$ inches in length and of the bore and thickness of a small-sized aspirating needle. The caliber of an ordinary hypodermic needle is too fine to transmit oil. Syringes which are made wholly of glass or all of glass, with the exception of asbestos packing to the piston, are to be preferred. The oily mixture should be warm, about the temperature of the body when injected. Antiseptic precautions should, of course, be observed and the syringe and the solution should be sterile. The patient should stand erect with the buttocks exposed. After the mixture has been thoroughly shaken the syringe should be quickly filled, the needle attached and the injection given. Everything in this connection should be done speedily except the actual injection, which last should be gradual, a minute or so being taken to slowly inject the dose. The patient should be instructed to relax his muscle while receiving the injection. If 30 minims are to be injected care should be taken to load the syringe to the extent of 40 to 45 minims, and while the injection is being given the outer end of the syringe should be tilted slightly upward. The reason for this lies in the fact that in a freshly shaken oily mixture there must, of course, be an admixture of some air bubbles. If the directions here laid down are followed all these air bubbles will collect during the process of injecting in the upper further portion of the piston and be contained in the last 10 or 15 minims

which are not injected. If at any time during the process of injecting much resistance is met to a further depression of the piston, or if the caliber of the needle becomes plugged by a packing therein of the mercurial salt, the needle should be immediately withdrawn and the remainder of the injection given in another place.

PRECAUTIONS.

Little pain or discomfort should be occasioned by the administration of this treatment. Sometimes the needle strikes a somewhat sensitive spot. The only really disagreeable feature connected with the treatment lies in the occasional puncture of a blood vessel of some size. This may cause a little intramuscular hemorrhage, the result being the leaving of a sore spot, which may persist for several days pending the absorption of the clot, or the end of the needle being left piercing the caliber of a vessel while the injection is being given the oil is taken immediately to the lung, the result being an embolism, which is evidenced by spasmodic coughing and some temporary dyspnea. It is on this last account that stress is laid on the slowness in the administration of the injection, so that if any chest symptoms develop the needle can be withdrawn. If severe chest symptoms develop the patient should lie down till they disappear. In 15 minutes to half an hour such symptoms generally disappear. In very rare instances a patient may have a reminder in connection with his chest for several days after such a mishap.

An injection of this description and dose is sufficient to medicate the average individual for five days to a week. The first few injections, and especially the very first one, are apt to produce systemic effects much more vigorously than are subsequent ones. In other words, individuals, as a rule, become systemically accustomed to mercury so given, the result being that they tolerate these injections without experiencing any special immediate or following discomfort. It is not unusual after the first injection for a brisk diarrhea to develop in an hour or two and last the better part of a day. Indefinite muscular pains or nervous symptoms somewhat akin to hysteria may with others be the immediate and temporary after-effects, while with many soreness of the teeth are experienced. On this account I make it a practice to explain to a patient preparatory to the administration of the first injection that some prompt systemic symptoms may be felt.

Although 30 minims of the oil mixture represent the average dose, many individuals will be found to take 40 minims without developing any systemic intolerance, while with a few 20 minims will be found to represent the dose best adapted. This form of injection, it is seen, does not require so frequent repetition to produce a given effect as does the corrosive sublimate solution.

Judgment must be used in hypodermic medication not to produce salivation. The gums must be watched and the breath observed. If mercurial odor be evident in the breath or if the gums be characteristically tumefied and bleed on pressure a repetition of the treatment must not be given till these symptoms subside. Although care should always be exercised in the continuous administration of mercury by any method, lest undue effects from the drug arise, especial care should be observed in connection with the hypodermic administration. I do not wish, however, by this remark, to frighten anyone so that he will be afraid to use this treatment, for I am firmly of the opinion that at the present time far more harm results in connection with

syphilis from the administration of too little than of too much mercury.

CHOICE OF CASES.

If an individual presents himself during the primary stage of syphilis and keeps under observation so that mercurial treatment can be inaugurated as soon as a definite diagnosis can be made, then, in most instances, the administration of the drug by the mouth is the form of medication to be first tried. If the drug so administered is satisfactorily tolerated and succeeds in not only dissipating the symptoms which may be present, but also in preventing the development of new ones, then there is no good reason for displacing the method first adopted in favor of another. Not infrequently in such an instance, however, mercury by mouth, although well tolerated, may not, especially during the first few months of its administration, be potent enough to entirely hold the disease in abeyance. In such cases a hypodermic injection given from time to time will satisfactorily supplement the effect of the mercury taken by mouth. If a person presents himself for the first time late in the secondary stage of the disease, where, owing to anemia, facial or other prominent eruptive manifestations, alopecia, cephalalgia, rheumatoid pains, mucous patches or like developments, it may be of the greatest importance to quickly quell symptoms, not only for the good of the individual, but also to prevent the fact that syphilis has been contracted from becoming generally known; then hypodermic medication is to be recommended owing to the quickness of the ensuing results, a marked fading in connection with an eruptive lesion and decided cessation in connection with pain being noted even after the first injection. In a case such as this after the disease is well under control, then it may be that another form of medication can be substituted.

ILLUSTRATIVE CASES.

There are a certain class of cases wherein mercury by mouth has little or no effect on syphilis. In a majority of this class the drug is not absorbed from the alimentary canal. This non-absorption many times is accompanied by diarrhea, though occasionally the bowel action seems normal. In the minority of these peculiar cases mercury taken by mouth is absorbed perhaps to the extent of producing soreness of the teeth and gums or salivation and yet may exhibit little potency in staying the progress of syphilis. In all these cases mercury should be administered cutaneously or hypodermically in order to attain satisfactory results. As there are some claiming to be authorities on syphilis who still declare that mercury administered by mouth is capable of successfully combating the disease in all instances, it may be well to make special allusion to the two following cases taken from my practice:

One was that of a man who first came to me nine months after his chancre. He had been put on mercury by mouth as soon as his chancre had fully developed, and had continuously so taken the drug until he left his first adviser and came to me. His alimentary tract had apparently tolerated the drug and he had been able to take it in full doses. So hard and persistently had the administration of the mercury been pushed that the gums and teeth had many times been resultingly affected. Three months after the chancre characteristic headaches began to appear, and then gradually the spinal nerves became involved. For six weeks before consulting me vertigo, more and more marked, had been associated with the headaches, the severity of which had become intense. The spinal condition had become so marked that the patient walked with great difficulty—and then with a bent and rigid posture. Areas of great sensitiveness had also developed over the

cranium. As soon as the patient came under my care all mercury by the mouth was discontinued and the drug crowded hypodermically. A prompt amelioration of symptoms resulted and in six weeks he was in a comfortable state. Business at that time calling him away, the previous symptoms promptly returned, in spite of mercury by mouth. These were again subdued by hypodermic injections as in the first instance. This case finally got well under a prolonged course of hypodermic medication.

Another case which I will cite was that of a man who first reported with an initial lesion. After watching him long enough to make a diagnosis of syphilis positive the attempt was made to administer mercury by the mouth. The form of drug first used was pill-mass, gr. $\frac{1}{2}$, three times a day being ordered. In four or five days marked salivation began in spite of careful attention to the mouth. After a wait of 10 days another attempt was made, gr. $\frac{1}{16}$ hydrarg. chlorid corros., twice a day, being prescribed. In a few days the mouth again became sore, and the drug had to be stopped. In the meantime marked secondary evidences of the disease were rapidly developing. A careful trial was next made of inunctions. These were well tolerated. The disease, however, was precocious in its development, and on that account I thought well of making a trial of hypodermic treatment. The first hypodermic was very light, through fear of resulting mouth symptoms. As these did not develop, the hypodermic dose was quickly augmented and a full, vigorous course of such treatment was given. No mouth symptoms due to mercury manifested themselves during this latter treatment, and the subsidence of the syphilitic evidences was satisfactory and progressive.

In concluding, I wish to champion the cause of mercury hypodermically in conjunction with large doses of an iodd by the mouth in the treatment of syphilitic ataxia in such of those cases as come under observation before the spinal lesion has so resolved itself into sclerous tissue as to be wholly beyond the influence of antisyphilitic medication.

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DISCUSSION.

DR. A. W. BAER, Chicago—The question of the comparative value of the organic and inorganic mercurial compounds in the treatment of syphilis seems to be still unsettled. I have had very little to do with the organic salts, as I have found the inorganic salts efficient and reliable. I have no experience to report on the hypodermic administration. I prefer giving mercurials by the mouth and inunction and have not seen any reason to abandon this method as I have found it entirely satisfactory.

DR. W. J. ROBINSON, New York—Has the author of the paper had any experience with mercuric succinimid. From some observations made I have been much impressed by its freedom from irritating quality. It can be combined for hypodermic use with cocaine if desired. In Germany this salt is used in 5 per cent. solution, with which is combined 1 per cent. of cocaine hydrochlorate.

DR. EUGENE FULLER, New York—I have had no experience with the succinimid. No doubt there are many cases where giving the mercury by the mouth will answer the purpose quite as well, but it takes too long for the mercury to produce its constitutional effects, when given by the mouth, to make it suitable for use in urgent cases. In such cases, the hypodermic method is preferable on account of its prompt action and accuracy of dosage, and the fact that it is administered by the physician. There are many cases which can not be kept under observation for the length of time required for successful treatment, when they are allowed to take the medicine themselves.

Health in Islands.—It has been frequently observed that the inhabitants of islands and small peninsulas attain longer life than those of continents. The Barbadoes, Greece, Madeira and the Shetlands are quoted as illustrations of the truth of this statement.—*Medical News*.

DOSAGE OF LIQUID MEDICINES: A SIMPLE PLAN FOR GREATER ACCURACY AND METRIC MEASURES.*

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CHICAGO.

The strongest reason for the adoption of the metric weights and measures is the use of the present collection of arbitrary standards, conceived by chance and inherited by ages of medieval crudescence.

The paramount quality of that by which quantities are determined must be accuracy; that by which comparison is made must be as nearly invariable and inflexible as can possibly be devised, otherwise it is not a true standard. Scientific accuracy requires also that a fixed relation, only varied through variation in temperature, should prevail between weight and volume, and consequently that units of weights and liquid measures must be correlated, that is commensurate. No scheme for comparison which does not meet these fundamental requirements is worthy the name of a system, nor should be tolerated in this twentieth century.

CUSTOMARY MEASURES.

Subjecting the customary weights and liquid measures to this test they are found to be so absolutely at variance as to be a travesty on our boasted civilization and progress. Take the ounces of the three alleged systems for comparison, and they show the following equivalents in grains: avoirdupois, 437½ grs.; apothecaries', or troy, 480 grs.; fluidounce, 456 grs. (water at 15 C.). This is due to the fact that one pint of water weighs 7,300 grs. (approx.) instead of one avoirdupois pound, or 7,000 grs. In other words, the old saying "A pint's a pound, the world around," is as far from the truth as probably was the conception of the world by those who coined the catchy phrase.

There is a difference of about 4 per cent. which appears also in the apothecaries' ounce as against the fluid ounce, and is thus introduced in the smaller denominations, drams, grains, and minims; the fluid dram being equivalent to 56 grains, the minim about 96/100 of a grain.

INACCURATE DOSAGE.

It is this very discrepancy or lack of commensurability which is so trying both to the physician and pharmacist. In the formulation of percentage solutions, where great accuracy is usually required, there will be a discrepancy of from 4 to 10 per cent., according to which particular method the quantities have been determined. If, for example, the formula appears:

R. Atropinæ sulphatis gr. x
Aque sterilatæ ad ʒi
M. Et. f. sol. Sig.: Use one minim.

If prepared by fluid measure each minim will represent 1/48 grain of atropin sulphate; if, on the other hand, a troy ounce of water should be used, owing to the absence of the prefix "fl" before the ounce symbol, then the amount of atropin in one minim would be about 1/50 grain, or, if perchance avoirdupois ounce be used, 1/44 grain would be contained in one minim. The difference in dosage may not be serious, but should such variations be tolerated, or such inaccurate methods be continued?

Aside from the disadvantages of inaccuracy and lack of uniformity of the customary weights and measures, there is also the lack of correlation with our decimal system of notation. For domestic purposes the convenience of a decimal system of weights and measures, in harmony with our decimal system of coinage, must be equally as great as this so-called international system now appears to be advantageous for the extension of foreign trade. As is well known, the decimal system of weights and measures is now in use in all but English-speaking countries. As it is complementary to our decimal system of money, it should have been adopted along with it, as advocated by Jefferson and John Quincy Adams. The return to the old system of pounds, shillings, and pence would be no more absurd than to continue to inflict on the coming generation the present aggregation of weights and measures.

THE FALLACY OF THE SPOONFUL.

Contemporaneous with the customary weights and measures are the so-called domestic measures for liquids, as represented by the "spoonful." How this useful utensil varies in capacity is well known, and when it is also remembered that the amount of liquid a spoon will hold when "full" depends on the generosity of the person filling it, the spoonful method of administration, while innocuous for placebos, can not be regarded as scientific medication. The "meniscus," or the level of a liquid, which determines a measured quantity, is, according to the best authority (Dr. Hager), the medial of a transverse line drawn through the lowest point in the surface of the liquid and one drawn at the highest point of contact with the liquid and the confining sides. This line may be easily determined when the liquid is measured in glass, and the smaller the diameter the more exact the measurement. As is well-known, the graduated pipettes and burettes used in chemical work are constructed on this principle. In measuring by a spoon the *meniscus* can not be readily determined, and owing to the cohesion of liquids, especially when aqueous, after the spoon has been filled to its apparent level, an equal amount of the liquid can be poured on top of it, if done slowly, without any of the liquid running over. For these reasons it may be safely asserted that instead of a teaspoonful being equivalent to one fluidram, it may be two fluidrams. In larger spoons the difference is proportionately less, but yet so great as to have no semblance of accurate measurements. Not only should standard spoons be devised, but a uniform meniscus should, if possible, be adopted, although the spoon measure, as best being empiric, should be superseded by graduated glass measures, similar to those at present extensively used. A readjustment of the relative volumes of the three different spoon measures in vogue is necessary, and such relation should correspond with metric measures.

Recently the following metric equivalents have been approved by the Philadelphia College of Pharmacy, and incorporated in the scheme presented further on in this paper: One teaspoonful = 5 c.c.; one dessertspoonful = 10 c.c.; one tablespoonful = 15 c.c.

The following definition for the meniscus, originally taken from the French Codex, has also been approved: "A spoon is full when the liquid it contains comes up to, but does not show a curve above the upper edge or rim of the bowl."

THE DROP.

But if the spoonful measure is only an approximation, the drop shows still less uniformity in volume. As

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Materia Medica, Pharmacy and Therapeutics, and approved for publication by the Executive Committee: Drs. A. W. Baer, A. B. Lyons and W. J. Robinson.

is well known, the size of drops varies with different liquids, is influenced by the size of the container and shape of the lip from which it is dropped, and by the temperature and volatility of the liquid. No careful physician would administer a potent agent by drops except through a minim pipette. Recent investigations have shown that drops of uniform size may be obtained by dropping from a pipette of a certain outside diameter; thus a tube of 3 mm. outer diameter will deliver 20 drops of water at 15° C., which will measure 1 c.c. when dropped at the rate of one drop per second. Nor is the size greatly influenced by the character of the liquid, be it watery or more mobile. Such standard "droppers" have been recommended for the exact measurement of medicinal liquids and, owing to its many advantages, this drop has been incorporated in the table.

ADVANTAGES OF DECIMAL DIVISION.

The decimal system has advantages in computing dosage and formulating combinations not possessed by the binary or octonary system on which our customary weights are based, because in accord with our system of numeration.

ADAPTATION OF APOTHECARIES' WEIGHTS AND MEASURES TO THE METRIC SYSTEM.*

Showing by cross-references the relative quantities of customary denominations in Metric Terms, based on the Metric Standard Liter and Gram.

Decimal portion to 1 (Gm.)	Denomination.	Minim, drop, grain.	Cubic cm., gram.	Fl. Dram, spoonful, dram.	Centiliter, tablespoonful, dekagram.	Fl. oz., ounce.	Deciliter, four-oz., hektogram.	Semiliter, pint, semi-kilogram, pound.	Liter, quart, kilogram.	Abbreviations in order of preference.
0.001	Milligram...	50	1,000	5,000	10,000	25,000	100,000	500,000	1,000,000	mg.; 0.001... } These three denominations given only cg.; cgr.; 0.01 } for reference. dcg.; dg.; 0.1 }
0.01	Centigram...	5	100	500	1,000	2,500	10,000	50,000	100,000	
0.1	Decigram...	0.5	10	50	100	250	1,000	5,000	10,000	
0.05	Minim, drop	1	20	100	200	500	2,000	10,000	20,000	m.; mtm.; min.; gtt.; 0.05 c.c. gr.; mtrg.; 5 cg.; 0.03 c.c.; cm ³ ; ccm.; ml.; 1 c.c. Gm.; G.; 1.0. fldr.; fld.; fldtd.; met. spoonful; met. cochl.; 5 c.c. mdr.; mtd.; metdr.; 5.0 cl.; cltl.; met. tablespoonful; met. cochlmag.; 10 c.c. Dkg.; Dekag.; 10.0 mfoz.; met. floz.; quadcl.; 25 c.c. moz.; mtoz.; quad. Hkg.; 25.0 del.; decilit.; fHk.; flquatuncia.; 100 c.c. Hk.; Hkg.; quatuncia.; Four-ounce; 100.0 Smlit.; mpt.; ½ L.; 500 c.c. Smkg.; mpd.; ½ K.; 500.0 L.; mqt.; 1000 c.c. K.; Kg.; 1,000.
1	Grain	1	20	100	200	500	2,000	10,000	20,000	
1	Cubic cm.	1	1	5	10	25	100	500	1,000	
5	Gram	20	1	5	10	25	100	500	1,000	
5	Fl. dram	100	5	1	2	5	20	100	200	
10	Dram	100	5	1	2	5	20	100	200	
10	Centiliter	200	10	2	1	2.5	10	50	100	
25	Dekagram	200	10	2	1	2.5	10	50	100	
25	Fl. ounce	500	25	5	2.5	1	4	20	40	
100	Ounce	500	25	5	2.5	1	4	20	40	
100	Deciliter	2,000	100	20	10	4	1	5	10	
100	Hektogram	2,000	100	20	10	4	1	5	10	
500	Semi-liter	10,000	500	100	50	20	5	1	2	
500	Semi-kilogram	10,000	500	100	50	20	5	1	2	
1000	Liter	20,000	1,000	200	100	40	10	2	1	
1000	Kilogram	20,000	1,000	200	100	40	10	2	1	

This adaptation is based upon the fact that 20 drops of water at 15° C., delivered from a minim pipette with an external diameter of 3 mm., will measure one cc.

* From a scheme of adaptation presented to the Committee of Revision of the U. S. Pharmacopeia (1900) by the author.

A little practice will soon prove that by formulating the quantity in decimal amounts, the individual dosage may be seen at once without, as a rule, entailing any calculations. If, for example, ten or its multiple of powders, pills, etc., are ordered, the amount of the active agent for the whole quantity is at once apparent; thus:

	Dose.	10 powders.	20 powders.
R. Resinæ podophyllini.....	0|01	0|1	0|2
Hydragryi chloridi mite..	0|1	1|0	2|0
Sacchari lacti.....	0|5	5|0	10|0
	Dose.	10 pills.	30 pills.
R. Acidi arsenosi	0|005	0|05	0|15
Strychninæ	0|001	0|01	0|03
Quininæ sulphatis	0|1	1|0	3|0

If a liquid mixture is desired, it should be similarly ordered in quantities of 100 c.c., 50 c.c. or 25 c.c.

	Dose in 5 c.c.	Dose in 100 c.c.	Dose in 50 c.c.
R. Morphinæ sulphatis.....	0|01	0|2	0|1
Potassii bromidi	0|5	10|0	5|0
Chloralis	0|3	6|0	3|0
Syrupi aurantii ad.....	5|0	100|0	50|0

But it is in preparations for external use that the decimal system is *sui generis*, because their strengths are usually referred to by the per cent. or by per mille. Thus solutions for injections, etc., may be quickly prepared by taking for 100 c.c. the number of grams represented by the percentage strength; for 10 c.c. decigram may be used. Ointments, plasters, etc., may be equally readily computed.

EXACT EQUIVALENTS THE OBSTACLE.

The greatest obstacle to the more general acceptance of the metric system, especially for the older practitioners, has been the attempt to learn and to use exact equivalents for the customary weights and measures. Since the latter are not in accord with each other, the discrepancies appear in the respective metric equivalents, and the result is chaos and confusion. To illustrate: While 32 grams is a fair approximation to the apoth. ounce, it will not do to take it as equivalent to the fluid ounce, because in that event 16 fluid ounces would be equal to 512 gram, or one pint, considerable more than one-half liter, which at once makes the error apparent. This same discrepancy occurs in the other

denominations: dram, grain, and minim, and is too serious an objection to be disregarded.

There is only one way of using the metric system, and that is to use it, or a decimal adaptation of it, combining the desirable units, grain and minim, which are so inseparably bound up with dosage in the medical mind.

With 20 drops, equivalent to a cubic centimeter, instead of 16 drops, and assuming the gram to contain 20 grains instead of 15.432 grains, we obtain at once these two essential denominational units as concordant and with the necessary decimal relation to the metric units, cubic centimeter and gram, on which a simple adaptation of the customary weights and measures may easily be constructed, as shown by the accompanying table.

As will be observed, there are no changes whatever in the metric standards.

The new metric grain proposed is about one-fifth less than the troy grain.

The minim is a little less than one-fifth smaller.

The new dram is about two-ninths greater than the apothecaries'.

The new fluidram is about three-elevenths larger than the present fluidram.

Both drams contain 100 grains or minims.

The new ounces would be all alike, representing 25 gm. or c.c. and would be from one-eighth to one-fifth less than the customary ounces.

The metric ounce, 25.0; one-fifth less than 1 apoth. ounce, 31.0; one-sixth less than 1 av. ounce, 28.35.

The metric fl. ounce, 25 c.c.; two-thirteenths less than 1 fl. ounce, 29.5.

The metric pint and pound are 5 to 10 per cent. greater respectively than the pint and avoirdupois pound.

The discrepancy in these two is not great, and would be readily adjusted. Each would contain 20 ounces, or 100 drams, or 10,000 grains, or minims.

The advantages of this adaptation for the calculation of doses, the strength of preparations, etc., is self-evident. The dose of an active agent in any quantity of a solution or mixture would have a definite decimal proportion and could be quickly calculated in metric grains, or minims. The smaller quantities represented by the proposed grain and minim would not be as objectionable as is the lack of proper relation between the present denominations—a fruitful source of error in practice. Besides, the difference is on the safe side, and by employing the proper designations no mistakes could occur. The author recommends that the abbreviation of "Gm." for gram should always be written with a capital G, to avoid confusion with "gr." for grain, which is never written with a capital letter. The metric fluidram is especially designated "metric spoonful" to afford an accurate method for administration of liquid medicines.

The adoption of a definite spoonful measure would cause the domestic measurement of medicines by graduated measures exclusively. Of the centiliter, or table-spoonful, the same may be said. The decimal proportion of the ounces to the drams and also to the grain and minim would enable the prescriber to at once estimate the quantities and yet have the metric equivalents at a glance. The deciliter, or four-ounce, would be an exceedingly convenient quantity for extemporaneous prescription; containing 20 fl. drams it is well adapted to formulas of which the dose is a teaspoonful. For example: one grain at a dose; then 20 grains=1 Gm. to 100 c.c., or 4 fl. ozs.

In the belief that the adoption of some such adaptation, possibly as an appendix in the U. S. Pharmacopeia, would materially aid in the more general acceptance of the metric system for prescription writing, this scheme has been proposed to the Committee of Revision and is now presented to the profession.

NOTE.—This paper was referred to a committee consisting of Drs. Frank Woodbury, H. C. Wood, Jr., and A. A. Eshner of Philadelphia to report on at the next annual session.

A remarkable specimen was shown at the meeting of the "Section on Clinical Medicine and Surgery" of the Medical and Chirurgical Faculty, December 19, by Dr. José Hirsh. It was an immense aneurism of the arch of the aorta of 24 years' standing. The sac was entirely filled with a hard clot and had projected forward, evading the sternum at the junction of manubrium and gladiolus, so that these bones were at right angles to each other. Notwithstanding his condition, the man (a Frenchman) had led a laborious life as a bricklayer. The case was considered one of spontaneous cure. Owing to the position of the tumor, there was a remarkable lack of symptoms. Oozing of blood from the apex of the tumor took place from time to time, and infection occurred in this way, death being due to general streptococcus infection.

THE IDENTITY OF NERVE FORCE AND ELECTRICITY.*

J. EMMET O'BRIEN, M.D.

SCHANTON, PA.

There has been in recent years such advance by physiologists in knowledge of nerve mechanisms, though not of nerve force, and such advance by electricians in knowledge of electricity in its protean phases, that, I think, the view of the relation of nerve force to electricity ought to be taken up anew by physiologists and restudied in the light of modern electricity. Advances by physiologists appear in minutely studied anatomy of neurons, relaying nerve mechanisms, conduction paths, terminal mechanisms, etc., and advances in this direction by electricians have been in better knowledge of the electric phenomena of cables, learned since physiologic views of the electrical phenomena of nerves became rather arbitrarily fixed; of fine currents and the wide field of induction, as revealed by the telephone; new light on the merely relative value of insulation; the phenomena of high frequency currents and their apparent reversal of electric law in insulation; storage or secondary batteries; electric relays, repeaters, transformers, microphones, terminal mechanisms, etc., and lastly electrolysis and electrochemistry.

PRIORITY AS TO THIS THEORY.

Noting the analogies between nervous and electric mechanisms revealed by the advances of recent years in the separate fields of physiologic anatomy and electricity, I affirmed the identity of nerve force and electricity in a paper¹ entitled "Analogies Between Nervous and Electrical Mechanisms: What is Nerve Force?" to our county and state medical societies in 1900. On account of the importance of the subject, and because the same conclusion has since been reached through other paths by Professors Loeb and Mathews, I again present it, with some further studies. The lay press has, as you are no doubt aware, given entire credit for originality, not only in methods, but as to scope and conclusions, to Professors Loeb and Mathews. They are entitled to great credit for methods in arriving at the identity of nerve force and electricity.² But it is not the lay press but scientific societies and journals that ought to adjudicate the question of originality in method, scope and conclusions; and so to you I leave it.

THE SPEED OF NERVE IMPULSE TRANSMISSION.

In reviewing works on physiology I have not found reasons given for the usual statement that nerve force is not electricity. I presume that the supposed slow speed of nerve force, the apparent want of insulation, of continuous circuits and of galvanic elements in nerves have been the principal objections. If there are other, better reasons I am anxious to know and acknowledge their validity. It does not appear that any very decisive experiments indicating slow speed of nerve impulse have been made since those of Du Bois Reymond and Helmholtz, though theirs have been repeated by many. Although we have since learned much about electricity, these experiments appear to bind opinion still. These experiments were made and interpreted before much was known of the electric phenomena of cables; before

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Dis. A. Stengel, Winfield S. Hall and Frank B. Wynn.

1. Published with drawings in the Pennsylvania Medical Journal, November, 1900.

2. See, for instance, "The Nature of the Nerve Impulse," by Mathews, Century Magazine, March, 1902.

the Gramme ring made electric power possible; before quadruplex telegraphy; before Reis invented the telephone or Bell perfected it; before Gray showed the harmonic duplex; or Edison perfected electric light, invented the phonograph or developed the miracle of the microphone discovered by Hughes in the variable resistance of carbon; before wireless telegraphy and the Roentgen ray; and before Tesla had revealed the apparent reversal of electric law of insulation by high-frequency currents. They were made before neuron anatomy was known. Charpentier, repeating the Reymond-Helmholtz experiments and ingeniously varying them, succeeded, according to the *Revue Scientifique*, in demonstrating about a year ago—that is, about a year after my first paper—that nerve force is electrical. While his conclusions favor the contention of my papers, I think that, with all other laboratory experiments so far made, they are not above criticism.

All these experimental data for and against the electric concept, are so far, I think, inadequate. You test a nerve cable at different points with depolarizable electrodes and, from the indications of a capillary electrometer, say that nerve impulse has a speed of only 30 meters per second. Does this test the normal physiologic currents of a nerve or warrant the conclusion as to speed? I think not. You apply the electrodes to the cut surface of a nerve cable, or of muscle, and get electric manifestations. You irritate a nerve and note the time of muscular contraction. Do any of these experiments directly measure normal currents or indicate their speed? I can not think so. The most that can justly be said for them is that they prove the presence of electricity in nerve and muscle. Suppose we applied precisely similar tests to a telephone cable or an ocean cable, we would get various electric indications and might call them cable impulses, negative variation, cathodic closing, cathodic block, etc., but would not be fairly measuring the speed of normal cable currents. I think it is safe to say that the speed of the normal current in nerves has never yet been measured unless we consider the first part of the double current observed by Charpentier to be such. The *Revue Scientifique* describes this phenomenon as follows: "A short electric excitation produces a double transmission on the part of the nerve. One part is transmitted almost instantaneously as in an ordinary conductor." In experiments on the speed of sensory impulses, as well as motor, the time of relay and terminal mechanisms will have to be estimated and deducted. The fact is, I believe, that the experiments relied on as determining the velocity of nerve current, while ingenious, are relatively coarse, clumsy and inadequate for the gossamer tenuity of the neurons and the fine electric currents they normally evolve and transmit. We need finer experiments than these, and on living nerves, to demonstrate the normal currents. Tesla, in 1900, announced an electric invention sensitive to the contraction of a muscle merely in the same room with it. This may indicate the direction of hope for methods fine enough for the demonstrations that we need.

But there is other evidence: There is available a series of what we may call natural experiments involving speed of nerve impulse which have not been studied to their logic conclusion in that regard, although physiologists have taken note of them in regard to fatigue, etc. I refer to the cases of rapid muscle movement in man, animals, birds and insects. It seems to me that the wing vibrations of insects, running up into thousands

per second, invite study and imply at a glance greater speed of nerve impulse than the conventional figure. The pianist's movements have been noted but are complicated. Scripture of Yale is the latest to make some tests of fatigue, not speed, in key tapping by non-experts. I have made a study of a more rapid movement than that of the pianist's, who uses ten fingers and many muscles. The expert telegrapher in speed contests uses the same flexors and extensors of the hand throughout. Having to move his key through the smallest possible space he attains a speed of 54 words per minute. This gives a well-attested average of $11\frac{1}{4}$ flexions and $11\frac{1}{4}$ extensions, or $22\frac{1}{2}$ vibrations, of the hand per second, sending the mixed Morse characters of average press words. Some of these characters are dots, as the letters e, i, s, h, p, and the figure 6; 1, 2, 3, 4, 5 and 6 dots respectively. As the dot is shorter than the dash or the space, it is made by motions faster than the average of $22\frac{1}{2}$ vibrations per second attained in sending the dots, dashes and spaces. Experts think twice as fast, or 45 vibrations of the hand per second. This means a rate of $22\frac{1}{2}$ contractions of the flexors and $22\frac{1}{2}$ contractions of the extensors per second for the dots, with an equal number of muscular relaxations. It does not seem probable that a nerve impulse is traveling down the line to the flexors while the extensors are contracting, or vice versa, so that it seems fair to divide the time between the two motions, leaving half a second for $22\frac{1}{2}$ impulses and flexions and half a second for $22\frac{1}{2}$ impulses and extensions. The length of nerve from brain to forearm may be about 30 inches. This means that not only does a normal nerve impulse travel 30 meters per second, but that over 30 impulses pass over the same meter of nerve per second, which is a different thing. Some physiologists admit the probability that each muscle contraction is maintained by a series of nerve impulses like those of the induced current used to experimentally tetanize a muscle. If that is true, and I am inclined to believe it, then our 30 impulses per meter, or rather 45 impulses per $\frac{3}{4}$ meter, per second, have to be largely multiplied. But if you reject the view of series-impulses and insist on a make and break current the time of muscle contraction will have to be deducted to leave the time of the nerve impulse which induced it. Muscle action is a visible, tangible, mechanical, time-consuming phenomenon. Where the time of a single nerve impulse and a single muscle contraction is to be divided how much shall we apportion to the mechanical action and how much to the flight of the nerve impulse which induces it? Until this is accurately determined I can only conceive the relative time to be the same as that occupied by the electric current traversing a conductor and that occupied by an armature, or a muscle, in responding to its call. But in any way that this problem can be figured it shows that normal nerve impulses travel faster than 30 meters per second. In this calculation I have not doubled the length of current path for a return circuit, but that possibility should not be lost sight of.

Normal nerve force is not only, as I believe, vastly faster than has been supposed, but electricity may be much slower in action than its well-known maximum velocity. There is a lag in cables due to capacity, inductive static charge and the electric reaction of armor. Nerves are cables although they appear to be often treated in experiments as if they were single uninsulated conductors. There is a perceptible lag in poorly insulated land lines in wet weather due to escape, short-circuiting, etc. So, in comparing electricity and nerve

force the minimum speed of electricity should be considered. It may be further reduced by adjustment of relays, repeaters, condensers, terminal mechanisms, etc. I have thus endeavored to show that there is no such gulf between the speed of electricity and nerve force as has been supposed. In both cases the velocity may be materially affected by conditions and mechanisms. It seems to me that further investigation and experiment in this direction by well-equipped physiologists will fairly meet the principal objection to the electric concept.

NERVE INSULATION.

The telephone threw a flood of light on induction and insulation. When, on the telephone line through which I first heard speech, I also read the Morse of neighboring telegraph lines I realized that induction occupies a wider zone than had been previously dreamed of. When telephone currents came through lines so poorly insulated or badly grounded that the telegraph would have been mute I realized that insulation is indeed merely relative, and what we now know of high-frequency currents has further enlarged this view. At one time it was supposed that nerve force could not be electric because the nerves were not insulated as in glass or gutta-percha. We now know that less insulation will suffice as for fine telephone currents.

NERVOUS AND ELECTRIC SYSTEM ANALOGIES.

The analogy between a single axone with its myelin sheath and an electric conductor with insulation is so obvious that I will not dwell on it, but will have something to say on insulation further on.

The analogy between a telegraph or telephone cable and a nerve cable armored with its sheath and containing numerous axones, each with its own myelin covering, is still more striking. The use of both is the same—communication, or the transmission of force.

Nerve and electric units will be compared farther on in this paper.

The analogy between nerve relays and electric relays is most significant; their purpose is the same, their mode of action is similar; there is variety of form in both, more apparent in electric relays because they are more familiar and more easily dissected.

Nothing can be more wondrously analogous than the multiple switchboards of the spinal cord and higher centers with those of the telegraph and telephone. Analogies may be traced in multitudinous terminal mechanisms of electric and nervous systems, and at both termini, that is, at sending and receiving ends of the circuits. We find analogy and, I believe, identity in the form of force energizing nervous and electric systems. We find, I believe, analogy in the speed of this force. We find more than analogy in the ensemble of force, velocity, conductors and mechanisms. We find identity of plan, purpose and use in nervous and electric mechanisms.

A galvanic cell no larger than a cartridge shell may work an ocean cable. The simplest concept of an electric unit is such a cell with a conducting circuit. Electric systems are built up of such units. The simplest concept of a nerve unit is a nerve cell: its dendrites, axones and collateral branches. The whole nervous system is built up of such units and these neurons evolve, transmit, repeat to each other and exchange through multiple switchboards the impulses necessary to the complex system of communication in the living body. The analogy between nervous and electric units is not merely in appearance, there is identity of purpose and use, namely, to generate and transmit force. In the electric unit the force is electric. In the neuron it gives electric mani-

festations as shown by the electrometer. Why is it not electricity? The gymnotus and some other fish produce and use electricity on the large scale as a defensive or offensive force; their electric cells are probably storage batteries. (Storage batteries do not retain or contain the electricity pumped into them; by it they are only placed in the chemical position to produce electricity. They would be better called secondary batteries.) If these fish produce electricity in organic cells and operate it through their nervous mechanism for purposes of warfare, it must be admitted that Nature can evolve electricity in organic cells and utilize it for peaceful purposes in the domestic economy of animals. She seems to have taken great care to provide a fine and complex mechanism for it. Nature's technic is not meaningless.

There have been cases of excessive production of electricity in human beings. Physiologists find in nerve cells two substances stainable respectively by acid and basic dyes; this indicates galvanic possibilities. Barker, in his great work, "The Nervous System," says that he rather favors Von Lennhosek's view, as follows:

We can very well conceive of a variety of excitation, which, starting from the cell, perhaps even from the nucleus, streams constantly through the axone and in it in some way, perhaps by a process comparable to electrolysis, maintains the chemical conditions suitable for the assimilation of the nutritive juices.

If eminent physiologists can conceive this can we not conceive a fine current of electricity; not enough to work an Atlantic cable, nor needing a mammoth battery so vast as a gun-cap to produce it, but of sufficient e. m. f. to work a nerve cable a few thousand miles shorter and needing nerve cells proportionately small to generate it? True, the physiologists refer to trophic processes, but if we conceive such a current for nutritive purposes why not for the obvious and appropriate purpose of communication.

If we take an electric unit and place an electro magnet, chemical paper, any one of a hundred terminal mechanisms, say a muscle, in the circuit, the kind of work done will depend on the mechanism of the terminal. The same is true of the nerve unit and argues that the communicating force is the same. It will suit my rude notions of these analogies better and make my conception of them easier if you can admit the existence of complete, or return, circuits. Recent investigations show that not only are there probably two filaments sent to each terminal organ, but every axone has numerous collaterals. Groups of cells have intimate relations, and connections are, according to the neuron concept, contacted by variable resistances; besides these paths there are general return circuits possible, like in the telegraph and telephone. Endowed with motility the dendrites make contact by different paths for the nerve current through the nerve centers, thus doing automatically what the operator does at the telephone switchboard when she connects different subscribers. The analogy may seem even closer than this in the case of automatic telephone exchanges requiring no operator, but I do not mean now to suppose electromagnetism in the nerve repeaters, but rather that their elements react on each other like galvanic elements in a battery or, by induction, like condensers, transformers, etc. In alternating circuits the transformer repeats from one line to another and converts the current to a higher or lower voltage. Every induction coil is a repeater. The electric condenser relays, retards and intensifies discharge. The effect is varied if the plates approach or recede; doubtless the same is true of the nerve processes.

The question of insulation is important to the electric concept. There is probably no absolute insulation anywhere; it is relative; a matter of degree. Let me illustrate: A man was killed on a lamp-pole by an alternating current of 2,800 volts. I traced the current from the wire through his spur, body, hands, to the metallic braces of the mast-arm, where it divided, part going down the pole and part through the metallic mast-arm and manipulating rod to a spike in the pole within ten feet of the ground, thence by the pole to the ground. On testing the escape through the pole by inserting an electric bell wire in it a few feet from the ground and grounding the other end of the bell circuit the escaping current rang the bell. In military telegraph experience during the Civil War I have not only worked successfully through badly insulated lines, but through some grounded intentionally for obstruction. A portion of the first Atlantic cable, used across Chesapeake Bay in 1862, furnished me varied experience in poor conduction, bad insulation and slow work. With the telephone when the old ground return was used I have heard speech when the line sometimes lay on the ground. With such a wire of twenty miles so badly insulated and grounded that speech became indistinguishable in the receiving diaphragm I have yet kept up communication by the simpler Morse signals through the more sensitive telephone mechanisms. Communication has been had through a mile or more of water not insulated from the earth which formed the other side of the circuit; this by means of the Morse language and telephone instruments. Wireless telegraphy scorns insulation. Whatever theory others may have of it, mine is that there is a complete circuit, the earth forming one side of it, the atmosphere the other, and Marconi has worked it across the Atlantic without insulation. So, I say electric insulation is merely relative, the degree required depends on the kind of current, the purpose and the mechanisms used. If nerve force is not electricity, what other form of force is it that could be better kept insulated in the axones?

In considering insulation, relays and switching, I quote the following from Lombard in the American Text-book:

The axis-cylinders of the many fibers which run side by side in the nerve trunk are separated from each other by the neurilemma and, in the case of the medullated nerves, by the myelin substance as well, so that there is not even contiguity, much less continuity of nerve substance. Thus the fibres of a nerve trunk, some afferent and others efferent, though running side by side, conduct independently of each other. For example, if the skin of the foot be pricked, the excitation of its sense organs is communicated to sensory nerve fibres, and is transmitted along them to the spinal cord, where the stimulus awakens certain groups of cells to activity; these cells in turn, by their branches, the motor nerve fibres, transmit the excitation down to the muscles of the legs, which . . . contract and withdraw the foot from the offending irritant. The sensory and motor nerves concerned in this reflex act run for a considerable part of their course in the same nerve trunk, but the sensory impulses have no direct effect on the motor nerve fibres, and the round-about course which has been described is the only way by which they can influence them. It is probable that isolated conduction by separate fibres and their branches holds good within the central nervous system as elsewhere, otherwise we could scarcely explain the localization of sensations or coordinated movements. It is possible that within the central nervous system the neuroglia may act to secure isolated conduction.

This is an admirable description. What is this system of conduction and isolation for? What force is it intended to convey? Can it be anything but electricity?

There is said to be more than 50 per cent. cholesterol in the solids of gross nerve tissue; it is probably mostly in the myelin sheath; it is an insulating substance; the conductors are very small, 1/1200 of an inch in diameter and smaller; the current needed is very fine if a battery of percussion caps may work an ocean cable. Nature has taken such exquisite care to keep these myriad conductors separate as she weaves them in skeins and tracts and plexæ in their course through her multiple switchboards that I can conceive the force they carry to be none other than electricity. Please note the apposition of axones of opposite polarity, so well described by Lombard, and which is found quite general throughout the nervous system, and compare it with the ingenious method of transposition of wires by which electricians have successfully endeavored to neutralize induction in telephone cables and air lines. In this, as in many other things, they seem to have unconsciously imitated Nature, and I have no doubt that the decussation and transposition of conductors has, in part, the same intention and the same effect in both nervous and electric systems: namely, to neutralize induction.

The sympathetic system is peculiar as to insulation; its axones are generally unmedullated, but they have sheaths. Gotch & Horsley³ found larger electric currents in non-medullated than in the medullated nerves, explained by Lombard by the fact that non-medullated nerves contain a greater number of axones than medullated nerves of the same size. The sympathetic system has a general function to perform: to maintain the tonicity of involuntary muscle and influence secretion. Compared with the cerebrospinal system I regard it as a storage, or secondary, battery and practically monofunctional. In that view it is unnecessary that its axones should be so perfectly insulated from each other as are those in the central system where the individual circuits have to convey special messages like private wires.

I trace analogy of mechanism and identity of function between tactile papillæ, Meissner's corpuscles, *tastzellen* and other nerve beginnings, and electric variable resistances, microphone transmitters and other sending mechanisms, some of which are almost as sensitive to the slightest compression as are the nerve organs. Electric conductivity, or its opposite, resistance, is varied enormously by the slightest pressure in the Blake, or long-distance transmitter, and the coil of nerve fiber in one of these nerve-sending mechanisms seems adapted to the same purpose and, indeed, fulfills it whether you admit that nerve force is electricity or not. The touch of a hair is appreciated by the microphone and by the nerve key; electric conductivity is varied in the microphone circuit sufficiently to affect an electro-magnet and translate the impressions into audible sound by the vibrating diaphragm; electric or nerve conductivity is varied in the touch corpuscle sufficiently to send a current through the nerve relays to the sensorium. I can not conceive any form of force that would respond to these mechanisms in either case but electricity.

Permit me to quote an occasional line of description from your latest text-books, especially from Barker's admirable work, and to flash a little electric light on it as we pass. Barker says: "A single neuron of one system is by virtue of a number of end ramifications able to enter into conduction relations with a number of neurones in the next higher system, . . . and per contra the terminals of a larger number of axones of one system may be arranged to influence only a small number of

3. Philosophical Transactions, 1891.

neurones of a neuron system of the next order." This in the light of electricity describes a multiple relay system of transformers through which not only signals are repeated, but force is diffused or concentrated. In other words, step-up or step-down transformers changing the e. m. f. of the current.

"Cutaneous sensory fields overlap" (Barker). That is, they are herringboned by nerve filaments reaching neighboring segments of the spinal cord, like two or three telephone systems in the same town and having the same subscribers, so that injury to one conductor will not prevent the subscriber, say a tactile push-button, from ringing up Central.

"Four qualities of sensation are mediated by the skin and apparently by specific sense organs, cold, warmth, touch and pain." (Barker.) This does not mean that the sensory nerves need differ from each other, nor from motor nerves except in polarity; nor that the force traversing them need be anything but electricity to convey these different impressions. The difference is in the terminal mechanism. The same sort of wire, the same electricity translates, conveys and reproduces musical tones, the composite vibrations of articulate speech, the Morse language, handwriting, print, pictures, light, heat, the x-ray, and so on, all depending on the terminal mechanism.

"A centripetal impulse, originating at the periphery, reaches the primary end station of the sensory neurones inside the central nervous system after passing through only one neurone." (Barker.) That is, it reaches the suburban exchange in the spinal cord, where the dendrites and cells that represent the Hello Girl automatically make the connections for local and long-distance communication.

"It was long thought that these peripheral end organs contained ganglion cells, but that view," says Barker, "has been proved to be false." This, to me, means that the battery is not in the touch organs of the skin, etc., but is in the individual neuron; in fact, in the local central, where it ought to be; and these end organs, whether tactile papillae, platelets, free endings, Ruffini's or Pacini's corpuscles, end bulbs of Krause or others on the sensory side, are sending mechanisms; keys, push-buttons, variable resistance transmitters, etc., such as we find in telephones, cables, telegraphs, electric bells and the like; and they operate in the same way.

"The number of nerve fibrils in ordinary epithelial structures is enormous. It would appear that almost every epithelial cell stands in contact relation with one or more nerve fibrils, and perhaps this may be true of all epithelial cells." (Condensed from Barker.) This shows a distribution of conductors sufficient for the phenomena of sensation to be electrical.

Let us glance at a point or two on the motor side. "Each of the separate muscle fibers is supplied by at least one nerve fiber, and under normal conditions only acts when stimulated by the nerve." (The American Text-book.) On this point I said, in my paper to the Lackawanna County Society in May, 1900, that "The fact is, I believe, that every muscle unit is surrounded by an electric field of force, disturbance of which causes it to contract; and the same is probably true of every protoplasmic unit." Thus anticipating Professor Loeb's announcement on that point by nearly two years.

"The motor nerve fibers to the muscles terminate in end plates." These motor terminal organs I regard as nerve electrodes which distribute and retard the current. One more word about retardation. For an impulse from

toe to brain and back to muscle there are three to ten relays from neuron to neuron, and at different levels in the switchboard of the cerebrospinal axis such an impulse is switched across to the motor side or co-ordinated. These relays, conditions of insulation, electric reaction of cables, galvanic elements in nerves; resistance in conductors, relays, end plates, etc.; all these factors are concerned in the time element of nerve conduction, and they are all electric factors. The limit of one paper will not permit further tracing of analogies.

Is it not significant that you find it necessary in your best text-books to adopt electrical terms? You speak of "Storage of Energy," "Discharge of Energy," "Currents," "Cells," "Conductors," "Resistance," "Induction," "Dynamic Polarity," etc. I hope you will soon find it right to adopt "Electricity" for "Nerve Force," which is a name that has sprung as a sort of *filius nullus* from "Vital Force," inheriting a little of its supernatural attributes. Seriously, I mean that many seem to regard nerve force as something beyond a natural form of force.

It is in considering the nervous system as a whole that the analogy to electric systems of communication appears most striking. When, fresh from the study of a great work, like Barker's, I picture the nervous system and its mechanisms in living action before my mind, I see beside it the central telegraph system of New York or London, with its radii of lines and cables, telephonic and telegraphic; its multiple switches, batteries, relays, transformers, condensers, resistances, shunts, duplex and automatic circuits; all this mechanism, like the nervous system, transmitting force and translating intelligence from point to point by terminal instruments which move, talk, write, print, light, inhibit, accelerate and regulate, and in a hundred ways doing what is done in the nervous system, and always by means of the same force, the only form of force capable of such vast and varied service.

IMPORTANCE OF THIS CONCEPT.

If the proposition can be accepted that nerve force is electrical it will, I think, advance knowledge. From that point investigators will take a new departure to explore with new light the functions of the nervous system and other scientific fields. Dr. F. Savary Pearce, who approved these views expressed in my papers of 1900, has found the electric and neuronic concept useful in interpreting the manifestations of some diseases of the brain and nervous system.⁴

Professors Loeb and Mathews, advancing from the chemical side, arrived at the point where they found that muscle and nerve force is electric, and at that point we met; I having reached it before them from the electric side by other, but, I think, as certain paths. I have not presumed to invade the technical field of biologic chemistry, in which Professor Loeb has done such admirable work, further than indicated in this paper. I will leave it to Professor Mathews and others to elucidate his views as to the particular form of electricity he finds nerve force to be. If his ingenious view that it is electrolytic can be accepted it will make it still easier to account for the time element in nerve conduction.

SUMMARY.

The construction of nerves has been closely, though unconsciously, imitated in electric cables.

Experiments on nerves should be interpreted according to the electrical peculiarities of cables, and not as if they were bare conductors.

4. See, for instance, his paper, "Some Points on Intraocular Neoplasms, etc.," read at the New York Academy of Medicine, May 21, 1901. Phila. Med. Journal, Nov. 16, 1901.

Nerves are insulated, distributed and arranged like fine electric conductors.

Their purpose and use are the same as the purpose and use of electric conductors, namely, communication from point to point.

They convey some form of force, and there is not such a gulf between its velocity and that of electricity as has been supposed. This force must be electricity because:

1. Electricity is always present when nerves act.
2. Electricity is the form of force that would do the work required. It is the form of force that would work with such construction.

3. Because the terminal and central mechanisms connected with the nerves correspond to the terminal and central mechanisms connected with electric systems of communication and do similar work in sending, receiving, relaying, switching, transforming, accumulating, retarding, distributing and translating impressions.

4. Finally, because electricity, with such construction of conductors and of terminal mechanisms is the only form of force that we know of that would do all the work required.

I therefore maintain that nerve force is electricity, and that it would advance knowledge of the nervous system and its functions to accept this proposition.

These views were regularly presented to medical societies in 1900 and published in the *Pennsylvania Medical Journal* in November, 1900. If they are considered worthy I should value some acknowledgment of their method and priority. The conclusion that nerve force is electricity may have been guessed at before, and some analogy must have been noted by all observers, but I think my papers covered more ground and brought more evidence together than could have been done before, and first clearly stated the logical necessity of the electric concept.

THE ABSORPTION OF ALBUMINS AND GLOBULINS.*

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DETROIT.

As albumins are non-dialyzable it was supposed until within recent years that they could not be absorbed as such, that they must be digested. The practice of rectal feeding has disproved this. Considerable quantities of undigested albumins are absorbed apparently unchanged.

Is there any such absorption from the stomach or small intestine? Using the ordinary albumins of food it is about impossible to determine this point. Give an albumin by the mouth and attempt to find it unchanged in lacteal or blood vessel—it is all but impossible. The text-books usually state that antitoxic serums given by the mouth are of no value, that antitoxin is destroyed by the process of digestion. This is probably true. It is certainly true that in artificial digestion, as carried out in the laboratory, the antitoxic power disappears.

But may there not be a part of the serum absorbed without undergoing digestion? I believe so. Ehrlich and his co-workers have shown that a suckling may receive a certain degree of immunity from the milk of an immunized mother, i. e., the antitoxin passes into the milk and is absorbed unchanged.

This is the only rational explanation of the well-known phenomenon that the suckling is relatively immune to a number of diseases that attack the older child.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. A. Stengel, Winfield S. Hall and Frank B. Wynn.

Carrier, as the result of a series of experiments made in the Pasteur Institute, concludes that antitoxin is not affected by ptyalin, that it is slowly destroyed by gastric digestion and rapidly by pancreatin digestion. The clinical experience of some practitioners, who persist in giving antitoxin by the mouth, led me to undertake some experiments on this line. The results I have thus far obtained are far from satisfactory, but they are possibly worth recording.

I gave guinea-pigs hypodermic injections of diphtheria toxin of known strength. The antitoxin was given per stomach, at times before and again immediately after the administration of the toxin. On giving the antitoxin the mouth of the animal was pried open, a few drops of the serum were placed well back in the mouth and forced swallowing was attempted. It was impossible to tell how much was swallowed and what was wasted. Later the serum was forced from a syringe through a tube introduced into the stomach. This is a very difficult procedure with guinea-pigs, owing to the size and shape of the upper part of the alimentary canal.

In one experiment 12 pigs were given varying amounts from 600 to 3,000 units of antitoxin, on the following day they were given 10 to 30 times the minimum fatal dose of toxin. All died.

In another series of 7 pigs, all received about 1,000 units of antitoxin in the morning, in the afternoon 5 of these received another dose, the next day they were injected with from 2 to 10 times the minimum fatal dose of toxin. The 5 pigs receiving the double dose of serum lived, the 2 having but one treatment died.

In the next series 7 pigs were given respectively 2, 5, 10, 15, 25, 50 and 100 times the minimum fatal dose of toxin. They then had 1,000 units of antitoxin per mouth; of these the ones receiving 15 and 100 doses of toxin died, the remainder lived.

The next series of 5 pigs received 2, 5, 10, 15 and 25 fatal doses of toxin. They then had two doses of 5 c.c. each of serum per rectum (much of which was not retained). Of these the two having 15 and 25 fatal doses of toxin died, while three lived.

Seven pigs were kept without food for 16 hours; they then received 1,000 units of antitoxin and toxin in amounts from 10 to 100 fatal doses. One pig receiving 10, another 100 doses of toxin lived, 5 died.

In the next series 10 pigs were given .1 c.c. of a bouillon culture of diphtheria germs; of these 5 were given 1,000 units of antitoxin; of these 4 died. Two were given 2,000 units of antitoxin; these lived; 3 were untreated and died.

It is to be noted that in all of these experiments the pigs received enormous doses of antitoxin, a half-pound guinea-pig receiving an amount that usually suffices for a 50-pound child. But it must also be noticed that they received large doses of toxin; further, that the alimentary canal of these animals is not accustomed to the digestion or absorption of animal proteids. The experiments are of more physiologic than clinical interest.

Ehrlich has shown that the proteid poisons, abrin and ricin, are absorbed and produce their immunizing effect when given by mouth. Frazer demonstrates a like action with snake venoms. We know that the active principle of the thyroid passes into the circulation from the alimentary canal. Apparently the active principle of the suprarenal gland resists digestion and is absorbed as such.

These experiments appear to show that under certain conditions antitoxic serum may be absorbed as such, but

the variations are so great in the experiments recorded, the results so uncertain, that one could not recommend the method for use. As the serum can be absorbed under exceptional conditions at least, I then began a series of experiments to try and determine what were the conditions necessary for absorption. These experiments are not yet completed, but the results have some interest, and I will give them in brief.

In the first series dogs weighing approximately 10 kilograms were used. The stomach was emptied with apomorphin and the bowels with saline previous to operation. Ether was used as the anesthetic. The abdomen was opened, the stomach and selected parts of the intestines were washed out with normal saline at body temperature. The stomach was tied off at the pylorus, and, after the introduction of the serum, the esophagus was tied. Three sections of the intestines were used: one in the jejunum below the opening of the pancreatic duct, another at the end of the ileum, and the other in the rectum. The intestinal loops were 11 cm. long, and, in so far as possible, their mesenteric attachments were unimpaired, rough handling was avoided, and, after the introduction of the serum, the organs were returned to the abdomen, the opening closed and the abdomen kept warm. After the serum had been in the various organs for one hour, the amount remaining was removed, and the amount of absorption was determined by precipitating the remaining albumin, drying and weighing.

The first experiment was with 0.6 per cent. sodium chlorid. Of this there was absorbed in the one hour from the stomach 36 per cent., from the jejunum 70 per cent., ileum 50 per cent., rectum 75 per cent.

The next experiment was with diphtheria antitoxin. This was diluted with 0.6 per cent. sodium chlorid, in some cases using 3 volumes of this to 1 of serum, in other cases 4 to 1. In the stomach was placed 125 c.c. of this mixture, in the loops of the intestines 20 c.c. After one hour 55 per cent. of the albumin was absorbed from the stomach, 45 per cent. from jejunum, 40 per cent. from ileum, 40 per cent. rectum.

In another like experiment with normal horse serum, the absorption was from stomach 48 per cent., jejunum 59 per cent., ileum 60 per cent., rectum 54 per cent.

I then tried to see the influence of various drugs and medicines on the rate of absorption. With sherry wine, the mixture containing 25 c.c. antitoxin, 62½ of wine, 37½ of .6 per cent. sodium chlorid the absorption from stomach was 45 per cent., jejunum 45 per cent., ileum 50 per cent., rectum 18 per cent. The mixture used in the above experiment contained 20 per cent. alcohol.

In a mixture containing 5 per cent. of alcohol the absorption from stomach was 55 per cent., jejunum 60 per cent., ileum 60 per cent., rectum 51 per cent. In a mixture containing 20 per cent. of brandy, or 10 per cent. of alcohol, absorption from stomach was 50 per cent., jejunum 70 per cent., ileum 85 per cent., rectum 73 per cent.

Next a mixture with a small per cent. of oil of peppermint was tried, and the absorption from stomach was 45 per cent., jejunum 76 per cent., ileum 73 per cent., rectum 45 per cent.

Next tincture of opium was added. The mixture placed in the stomach contained 2 c.c. of this in 125 c.c., that in the intestine 1 c.c. in 20. The rate of absorption was as follows: From stomach none, jejunum 80 per cent., ileum 70 per cent., rectum 60 per cent. A second dog gave stomach none, jejunum 64 per cent., ileum 71 per cent., rectum 69 per cent.

In the next experiment chloretone was used. One hundred c.c. of a saturated aqueous solution, 25 c.c. of serum in stomach and proportional amounts in intestines. Absorption from stomach was 38 per cent., jejunum none, ileum none, rectum none. On a second dog there was absorbed from stomach 38 per cent., jejunum 3 per cent., ileum none, rectum none.

With 10 per cent. glycerin absorption from stomach was 2 per cent., jejunum 30 per cent., ileum 24 per cent., rectum none. With 15 per cent. absorption from stomach was none, jejunum 27 per cent., ileum 9 per cent., rectum none.

A mixture containing, as usual, 25 c.c. of serum to 100 of normal sodium chlorid, had added to each of the sections of the alimentary canal 1/100 of a grain of atropin. Absorption from stomach was 12 per cent., jejunum 56 per cent., ileum 61 per cent., rectum 59 per cent. Second dog gave stomach 9 per cent., jejunum 64 per cent., ileum 58 per cent., rectum 54 per cent.

In the next experiment carbonated water was used instead of ordinary water. Absorption from stomach was 85 per cent. A second dog gave 80 per cent. The next dog with carbonated water gave absorption from stomach 58 per cent., jejunum 76 per cent., ileum 95 per cent., rectum 68 per cent. Another gave from stomach 60 per cent., jejunum 73 per cent., ileum 93 per cent., rectum 45 per cent.

In the next experiment the dog was starved several days to clear the intestinal canal. The mixture was introduced into the stomach with a catheter, no anesthetic being used. In this case there was no means of telling the amount of serum that had escaped from the stomach into the intestines. After one hour 56 per cent. of the albumin introduced had disappeared from the stomach.

The next dog was starved several days and then given a large dose of sodium sulphate to flush out the alimentary canal. A dog starved for the same length of time but without the purgative was used for comparison. There was absorbed from the stomach in the one without purgative 53 per cent., with purgative 60 per cent., jejunum 48 and 57 per cent., ileum 45 and 60 per cent., rectum 50 and 66 per cent. The average absorption after starvation was 49 per cent., and after starvation with previous flushing with sodium sulphate 61 per cent.

In the next three dogs sodium bicarbonate was added to the mixture. In the first and second dogs 2.5 per cent. of sodium bicarbonate the absorption from stomach was respectively 85 and 82 per cent. In the third dog 5 per cent. sodium bicarbonate was added and the absorption was 72 per cent.

In the guinea-pigs the absorption from stomach alone with normal serum and water was 60 per cent., with carbonated water 73 per cent., small amount of sodium bicarbonate 91 per cent., larger amount 65 per cent. The averages were taken from 6 guinea-pigs with each of the different solutions. The average absorption of egg albumin using 6 pigs, was 80 per cent.

These experiments are being continued. So far they appear to show either that antitoxin is not absorbed in the same proportion as the total albumins of serum, or is changed in being absorbed, the majority of the pigs dying when injected with several times the fatal dose of toxin, despite a large absorption of albumins. The result of this I will report later.

DISCUSSION.

DR. W. BECKER, Milwaukee, Wis.—Two years ago I attempted to get some knowledge as to toxins which are formed

in dilatation of the stomach, chronic gastritis, and similar diseases of the stomach. I found that if these filtered toxins were introduced into the venous circulation or subcutaneously into an animal they caused vague and unreliable symptoms, but if they were introduced into the stomach of a dog which had previously been washed with alcohol they showed very regular symptoms. I was compelled to drop the work and nothing was recorded. The introduction of alcohol favors the absorption of toxins on account of its paralytic action on the cells of the stomach. This much can be deduced by the experimental work I did, and it agrees perfectly with the work done by Dr. McClintock.

MODIFICATION OF THE CONNELL SUTURE.

RAYMOND CUSTER TURCK, M.D.

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CHICAGO.

Any method of intestinal anastomosis to be of value must, or should, combine, first, an absolute insurance from primary leakage of bowel contents; second, per-

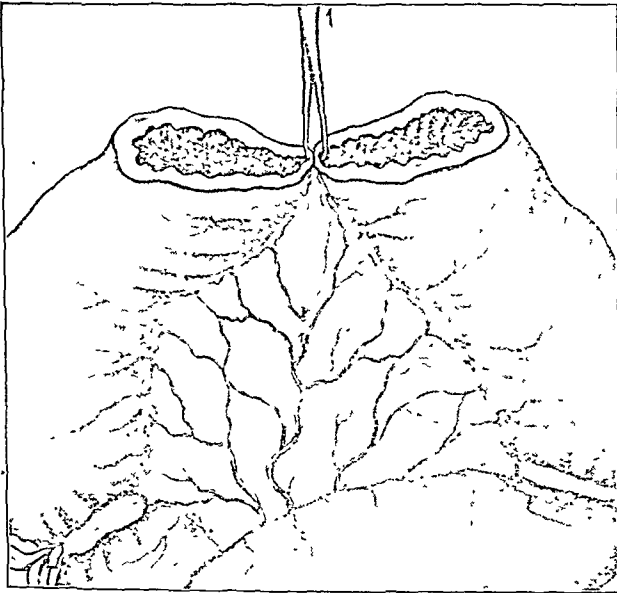


Figure 1.

manent strength of intestinal union; third, preservation of bowel lumen without creation of diaphragm; fourth, simplicity and rapidity of insertion. The fourth condition, however, is of relatively minor importance.

At the Post-Graduate Laboratory of Anatomy and Operative Surgery there have been performed by the faculty and students, during the past three years, over 2,000 intestinal operations on living dogs, the results of which have been more or less carefully noted. In the course of this series practically all known procedures for the suture or anastomosis of all portions of the gastro-intestinal tract have been worked out, and their advantages and disadvantages demonstrated.

It is not out of the way to state here that work on the dog is a much more severe test of sutures, or of an intestinal operation, than work on the living human. From a somewhat extended experience in animal experimentation, and some experience in hospital and surgical work and surgical observation, I can unhesitatingly say that any intestinal operation which can be performed successfully on the dog can be performed with infinitely greater success and safety on the human being.

It is apparently a popular impression that one may do any kind of rough or septic work on a dog with no bad results, and that is more or less true outside of the abdominal cavity. The dog is peculiarly predisposed to peritonitis from leakage or infection. One may, however, do any intestinal operation on a dog in a barn without regard to asepsis, and the dog may live, but to obtain results the dog's peritoneum must be handled with care and with greater regard for cleanliness and asepsis than that of the human. The dog will not recover, as does the human in the great majority of cases, after dirty intestinal work with faulty suturing.

The human peritoneum may be soiled with pus in pyosalpinx operations, or in appendicitis, or in work on the gall bladder, or in pelvic abscess, with no bad result in many cases; but minute infection will almost invariably cause death of dogs from general septic peritonitis.

Even the mortality from the use of the interrupted Lembert suture in intestinal anastomosis on the human is small, but that form of suture is extremely unsafe

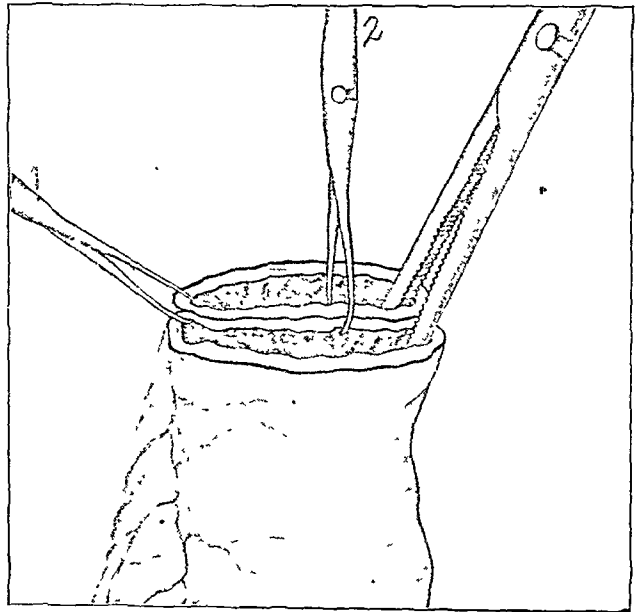


Figure 2.

and inefficient when applied to bowel work on the dog, it being impossible to prevent leakage of bowel contents, with subsequent death from peritonitis in over 35 per cent. of cases, unless the Lembert is used as Halsted's modification (i. e., Halsted's mattress suture) with the stitches placed very closely together or interlocked (author's interlocking stitch). Any form of continuous suture which embodies the Lembert principle of inversion of cut edges and union of a relatively broad peritoneal surface is greatly superior to any form of interrupted suture, unless interlocked, so far as primary or secondary safety from leakage is concerned. The right-angled Cushing suture is the best of the continuous forms yet devised.

The mortality from the use of the Lembert, or Czerny-Lembert, or Halsted, or other varieties of sutures now largely in vogue is reasonably small, and the results obtained therefrom comparatively good, yet there are forms of suture infinitely superior, and were it not for a tendency to stick to the good, old and tried methods the mortality would be less and the results better. Few operators have not had deaths from peritonitis, the re-

sult of leakage. A death from leakage in intestinal anastomosis under ordinary conditions in this advanced stage of surgical science is never justifiable nor excusable.

It has been demonstrated that, all conditions being equal, through-and-through sutures, i. e., those passing through all coats of the bowel, give greater holding power, better approximation of serous coats, greater ease of application and better primary and secondary union than sutures which include only the outer bowel tunics.

Lembert or Halsted may be open to this objection because of the frequent penetration through all of the bowel wall.

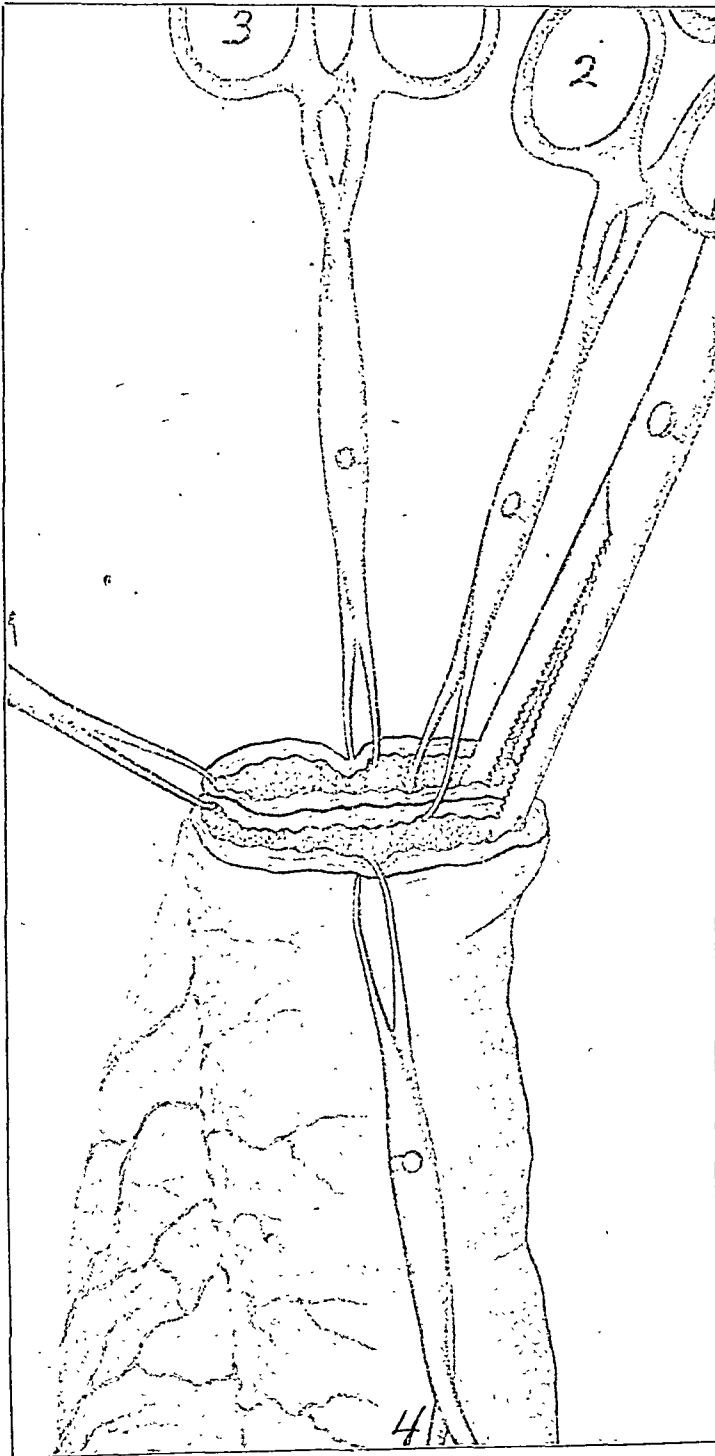


Figure 3.

The suture which is supposed to avoid the mucosa is never uniform, even in the hands of the most experienced operator; while it should include only the serous, muscular and fibrous coats, more often it includes or penetrates the mucosa, or misses the strong fibrous tunic and often has an extremely weak bite in the muscular coat.

The most valid objection to the through-and-through suture is that of infection traveling from within the bowel along the suture to the peritoneal cavity. The

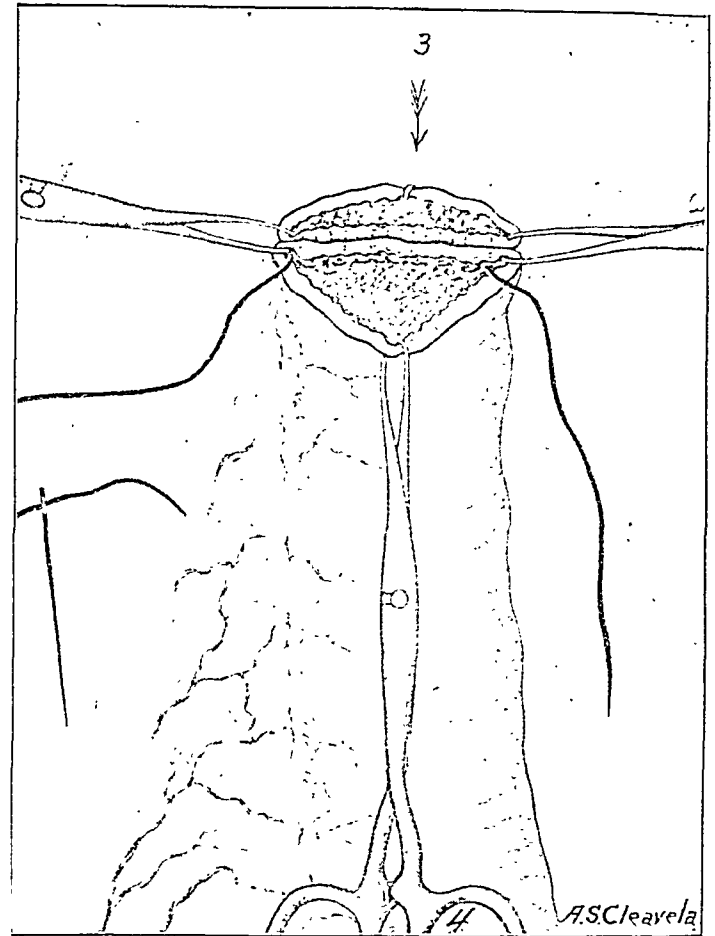


Figure 4.

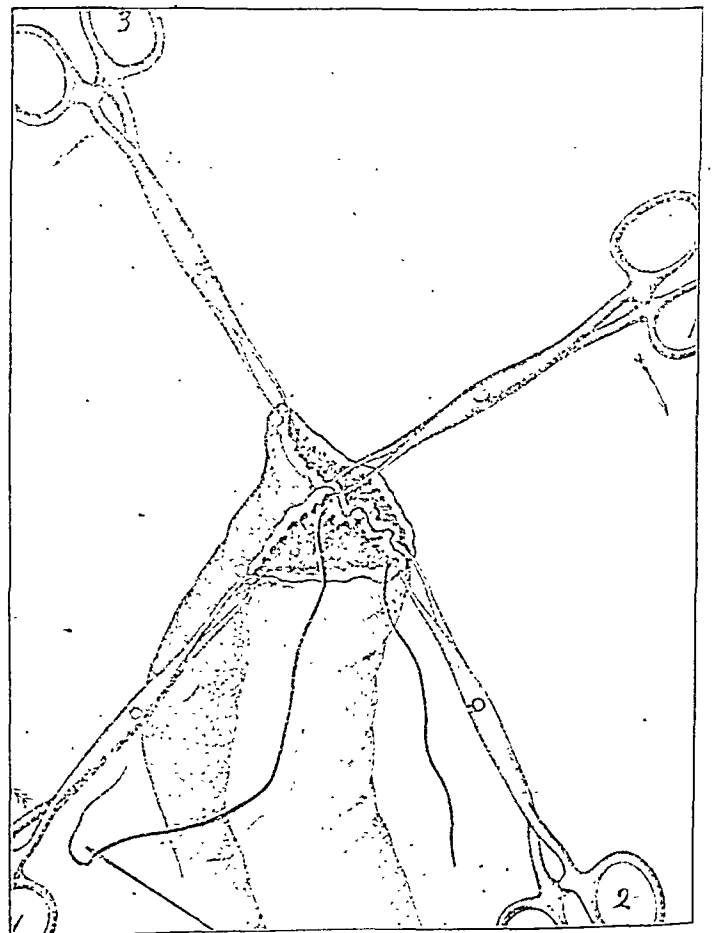


Figure 5.

With the through-and-through suture so placed that that part of it which appears in the peritoneal cavity

is practically of no moment, and with all knots and loose ends on the inside of the gut, no valid objection to it can be raised, and it appears as the safest, strongest, easiest and best of all sutures for the union of divided intestine. This was recognized by Maunsell, and the Maunsell operation for end-to-end anastomosis resulted. The Maunsell operation, however, is complicated and relatively difficult—it requires much manipulation of bowel, and even with extraordinary care there is always grave danger of peritoneal infection during the course of the operation from exposed mucous areas and bowel contents. The aim of the Maunsell operation and its *raison d'être* is an approach to perfection, but the application of its principles admits of much improvement.

The suture devised by Dr. F. Gregory Connell is a modification of Maunsell's; it embodies the principle of through-and-through stitching, with very firm primary and secondary sero-serous approximation, with prac-

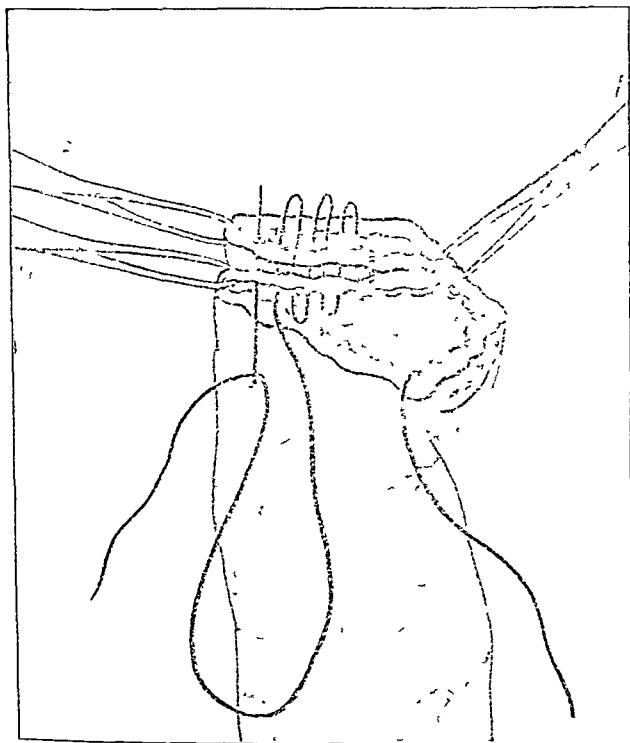


Figure 6

tically no suture material leading from the inside of the gut to the peritoneal cavity, and with all knots and loose suture ends on the inside of the bowel.

The method of procedure greatly lessens the manipulation of gut and risk of infection, and does away with the Maunsell inversion of both bowel ends through an opening in the side of one bowel loop. The Connell suture is simple and easy of application when once thoroughly understood. Students have done a complete end-to-end anastomosis by the Connell method in eight minutes. At the Post-Graduate Laboratory there have been done by the faculty, by students working under a demonstrator, by students working alone and by independent investigators, over 400 end-to-end anastomoses by the Connell method with a mortality of less than 3 per cent. At the hands of experienced operators and those of our students who have taken courses in abdominal surgery, with the Connell suture properly applied, the mortality directly traceable to the anastomosis, *per se*, is nil.

The Connell suture has been used on the human with unvarying success by operators who have understood it and who have properly applied it. No deaths have yet been reported as due to faults in the method.

The writer has heard and read a very few harsh criticisms of the Connell suture; that it was difficult to apply; that the inversion of the cut edges of the bowel during the last stage of the suturing was incomplete; that the union at the mesenteric border was unsafe, and that the tying of the last knot was altogether a complicated and unwarranted procedure and one on which

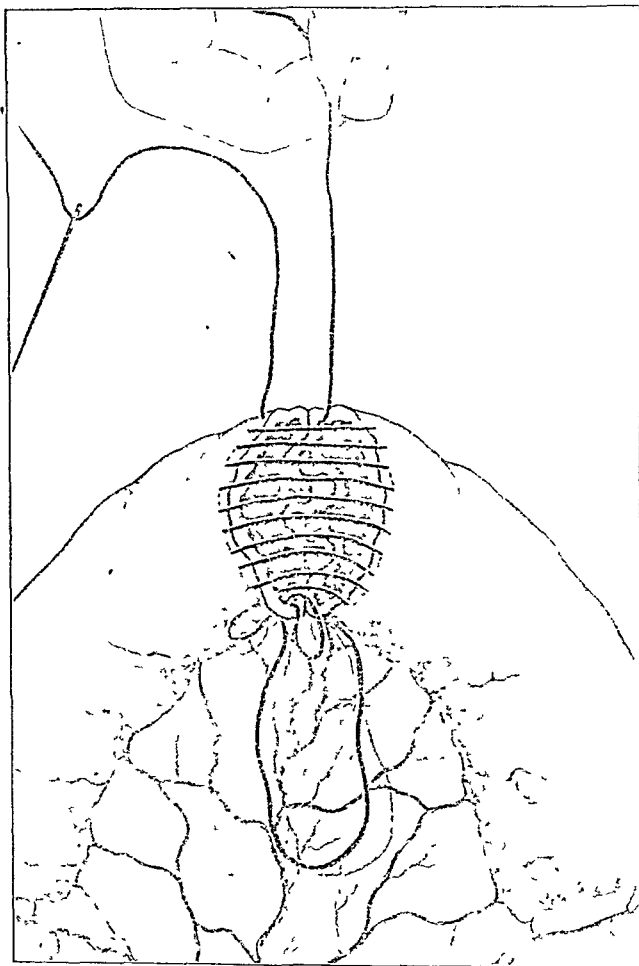


Figure 7.

no self-respecting and busy man could afford to spend time in mastering. A careful study of the method, a résumé of the work already done and the results obtained therefrom quickly demonstrate that the fault lies, not with the method, its technic, or its practical application, but in the lack of understanding and knowledge of the critic.

The Connell method of suture is not easily understood unless actually demonstrated or performed on intestine. It is difficult to illustrate or describe in a way which will show its simplicity and not confuse the reader. The most confusing features, in its description as well as in its actual application, is the method of placing the four tension sutures, which are of no importance so far as the vital principles are concerned, and the method of tying the last knot so that the knot will be on the inside of the gut.

The writer has modified a form of small tenaculum forceps (Fig. 11) which do away with the tension sutures

to good advantage in manipulation and understanding, and has devised a ligature carrier (Fig. 12) which simplifies the tying of the last knot.

The steps of the operation for end-to-end anastomosis are as follows:

First Step.—(a) Bring the mesenteric borders of the bowel ends together, as shown in Fig. 1. (b) Take a small bite with forceps 1 through both bowel ends immediately at the mesentery (Fig. 1), close forceps.

Second Step.—(a) Hold forceps 1 in left hand, lay bowels side by side (Fig. 2). (b) Have an assistant insert one blade of an ordinary hemostatic forceps in each loop; holding forceps vertically, make gentle traction away from forceps 1 (Fig. 2); this will put the bowel ends on the stretch and bowels will be laid evenly side by side. (c) A trifle more than one-half of the dis-

between forceps 1 and 2 with a continuous through-and-through right-angled suture, using a straight round needle. Begin at forceps 2 and suture toward forceps 1. Tie the first completed loop of the right-angled suture and leave the end long (Fig. 4); continue the suture to forceps 1, taking care to make a back stitch on every fourth loop to prevent the suture from drawing and puckering the gut; continue the suture a trifle beyond forceps 1, taking care to pass beneath the point where the forceps are fast, and to make a complete back stitch at this point—the mesenteric border is always the point of danger in any suture—as the suturing proceeds keep the thread taut to insure close approximation of serous surfaces.

Fifth Step.—(a) Drop forceps 2, or it may be removed at this stage. (b) Have the assistant take forceps

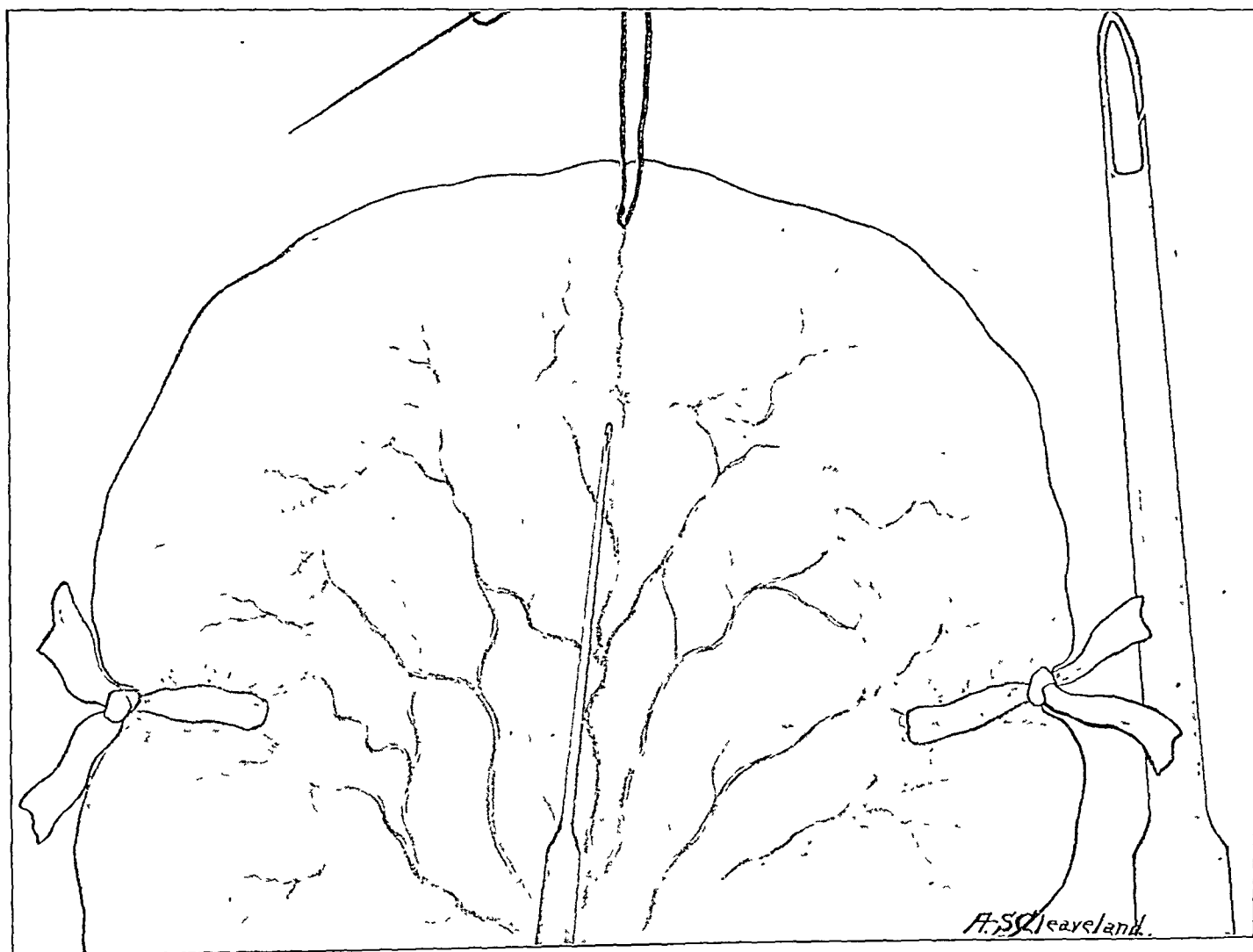


Fig. 8—Note the spring eye in ligature carrier.

tance from the mesenteric to the opposite border of the gut place forceps 2, as shown in Fig. 2, taking small bite through the contiguous walls of both bowels.

Third Step.—With the bowel ends still gently stretched and lying evenly side by side, place forceps 3 and 4 on the cut edges of the outer bowel walls, each exactly the same distance from the mesentery as forceps 2 (Fig. 3). Remove the hemostatic forceps. (The four forceps are now in the positions of the four Connell tension sutures and are to be used simply for holding the gut to facilitate sewing.)

Fourth Step.—(a) Have an assistant hold forceps 1 in his right hand and forceps 2 in his left hand, pulling gently in opposite directions; drop forceps 3 and 4 (Fig. 4). (b) Proceed to suture that portion of the bowel ends

1 in his right hand and forceps 3 and 4 close together in his left hand, drawing forceps 1 to the right and forceps 3 and 4 to the left (Fig. 5 shows forceps in transit, the arrows indicate direction of the traction), thus placing the bowels from 1 to 3 and from 1 to 4 together (Fig. 6). (c) Continue the suturing along from forceps 1 toward forceps 3 and 4 and a trifle beyond and beneath forceps 3 and 4 (Fig. 6).

All forceps are now to be removed and the bowel straightened out. Over two-thirds of the suturing will be completed at this stage and the remaining opening is to be closed by the through-and-through suture, applied in such a way as to completely invert the cut edges. The end of the suture which was tied and left long may be used as a tractor for one side. As the

suturing proceeds keep the thread pulled fairly taut as before, thus keeping the sutured bowels snugly together and at the same time providing a tractor for holding the gut in position.

is all closed, when the beginning and end of the continuous suture will be together; leave the *free end longer* than the tied end so that they can be readily identified.

Care must be taken during this last stage, as in every

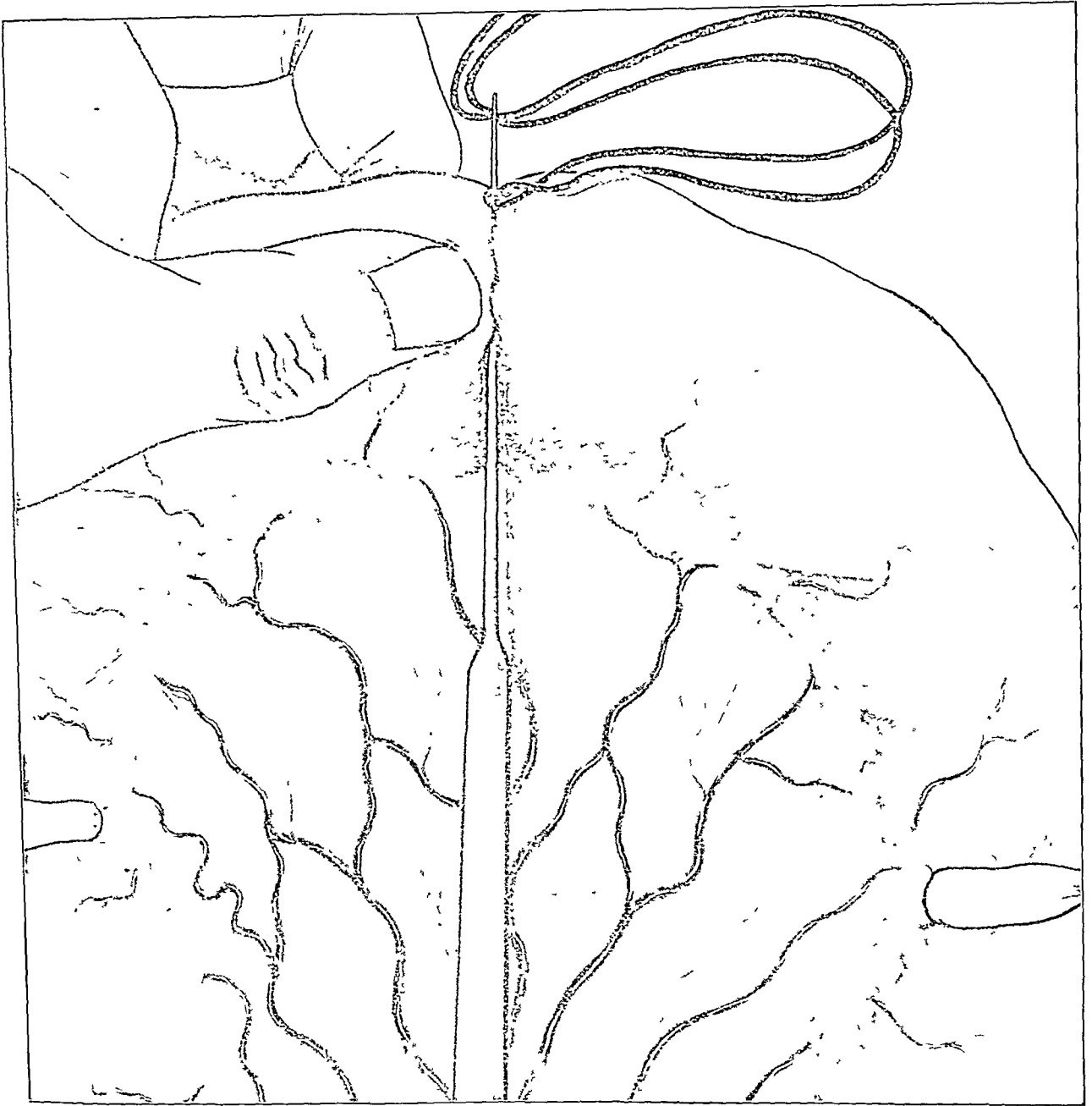


Figure 9.

Sixth Step.—Suture the remaining opening by applying the continuous right-angled through-and-through suture on exactly the same principle as if the bowels were laid side by side (Fig. 7). During the first step, when the bowels are held side by side, it should be noted

other case of through-and-through suturing when the bowel edges are not held firmly, that the suture penetrates all coats of the gut. When the bowel has been divided there is always an eversion of the mucosa with retraction of the serous and muscular coats—this must



Figure 12

that the needle passes from *within* bowel A outward, thence from *without* bowel B inward, then from *within* bowel B outward, and from *without* bowel A inward, thence from *within* bowel A outward, and so on, so that the *loop* is always on the inside of the gut. Carry out this method, inverting the cut edges until the opening

not mislead the operator into taking a bite through the mucosa only.

Nothing remains now but to tie the knot so that it shall lie on the inside of the gut.

Seventh Step.—Carefully insert the ligature carrier between the sutured edges from one-half to three-fourths

of an inch away from the point where the long suture ends emerge (Fig. 8); bring the carrier out exactly in the small opening between the long suture ends, thread both suture ends in the carrier and withdraw the instrument from the bowel (Fig. 9); pull the suture ends

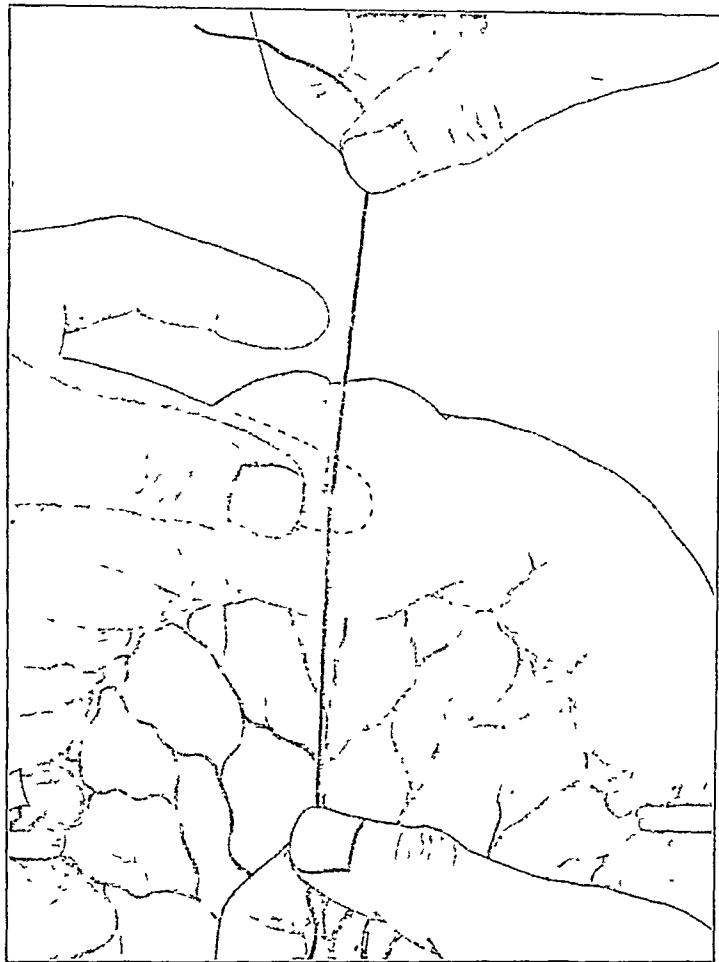


Figure 10.

entirely out through the place where the carrier entered and pull gently on the *long end only* until the two sides of the bowel are closely approximated and the bowel ends are entirely inverted. Tie the ends tightly together

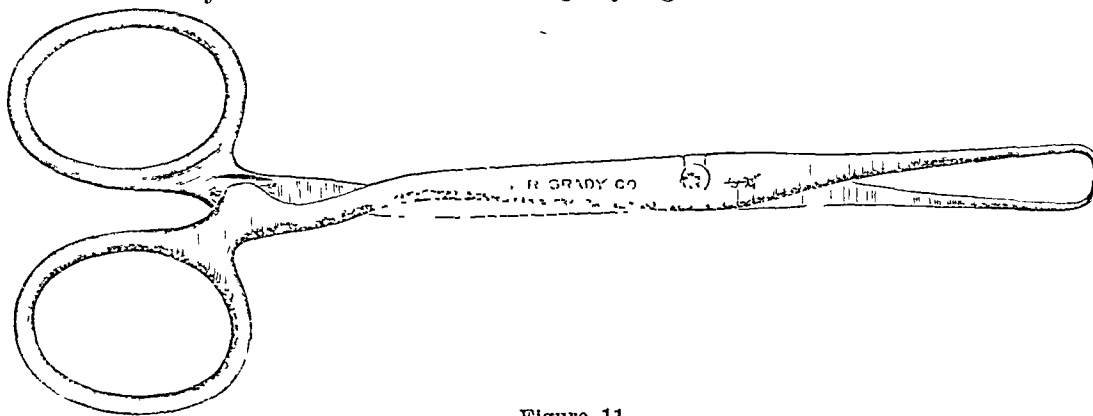


Figure 11.

with a surgeon's knot and cut ends short (Fig. 10). Roll the bowel gently between the fingers, the knot will slip through between the sutured edges and the bowel will regain its normal contour.

103 State Street.

Political Honors for Medical Men in Switzerland.—As THE JOURNAL has previously stated, the president of the Swiss republic is a physician. He is now serving his third term. He was elected to the National Council in 1867, and has served as legislator or member of the cabinet since. His salary as president is less than \$4,000. The representative of Switzerland in France is also a physician, Dr. Lardy.

THE IMPROVEMENT OF GENERAL ANESTHESIA ON THE BASIS OF SCHLEICH'S PRINCIPLES:

WITH SPECIAL REFERENCE TO ANESTHOL.

WILLY MEYER, M.D.

Professor of Surgery at the New York Post-Graduate Medical School and Hospital; Attending Surgeon to the German and New York Skin and Cancer Hospitals; Consulting Surgeon to the New York Infirmary.

NEW YORK CITY.

(Concluded from p. 556.)

ADMINISTRATION.

It is not my intention to give you any statistic data concerning the effect of anesthol in the various cases. Working as I do at a number of hospitals, with their continuously rotating house staff and consequent change of narcotizers every few months, such statistics would be of little value. I should, however, like to narrate briefly what experience has taught us in connection with the administration of the drug. Anesthol should be administered by the drop method, the same as all other drugs used for general anesthesia, first rapidly, later slowly.

After considerable experimentation we now drop it on an Esmarch mask with a double frame, which is covered with a doubly-folded piece of sterile gauze and a piece of oiled silk or Mosetig batiste. The latter has an opening about the size of a silver dollar in the center. It is true some of the anesthetic is thus wasted, but in return the patient besides always inhales a sufficient amount of fresh air.

If administered drop by drop the subject is easily brought under the influence of the anesthetic. There is no struggling during the induction of anesthesia. If, on the other hand, anesthol be poured indiscriminately on the mask, especially during the induction stage, the patient may suddenly turn pale and respiration may become shallow or even to all appearances cease altogether for a little while; yet, the heart will be found to be but little influenced, the pulse continuing to remain full and strong, in agreeable contradistinction to chloroform with its sudden syncope. My experience has always been that if anesthol was given in too large doses by an

inexperienced narcotizer it affected the respiratory center and not the circulatory. I have never had the narcotizer tell me, in the course of these four years: "Doctor, the pulse is weak," if by chance the anesthesia was not as satisfactory as desirable. The remark made in such an event was invariably: "Doctor, the patient does not breathe well." A short, rhythmic pressure on the

abdomen or artificial respiration with the mask entirely removed would, in these instances soon restore normal conditions.

I would, however, here especially emphasize the fact, that such accidents can be entirely avoided if the narcoses be carefully conducted. On the other hand, shallow breathing should not be mistaken for inhibition of breathing. So long as the patient's pupils were contracted and his lips red I did not share the alarm of the young narcotizer and have never considered artificial respiration called for. An inexperienced narcotizer may think that his patient has stopped breathing, when

respiration has merely become shallow. Removal of the mask, thus allowing the patient to breathe pure air for a few moments, will soon restore to normal the temporarily apparently alarming condition. Of course, if anesthol were continuously poured on the mask I am sure the narcotizer would succeed in killing his patient, even with this, I think, the safest of all anesthetics.

As soon as the second stage of general anesthesia has been reached, one or two drops every 2 or 3 seconds suffice in the hands of an experienced and efficient anesthetist to properly keep the patient under the influence of the drug. The administration by drops must be regularly continued throughout the narcosis.

DEEP ANESTHESIA IS NOT CAUSED.

In view of the fact that, according to Schleich's reasoning, the body stores very little of an anesthetic the B. P. of which corresponds, or nearly corresponds to its own temperature, since the patient exhales almost as much of the drug with each expiration as has been previously introduced into the blood on inspiration, anesthesia is thus merely kept going. The patient is kept just sufficiently under the influence of the anesthetic to enable the operator to conveniently do his work. The patient never is any more deeply narcotized than is necessary for the surgeon to perform his operation. In consequence of this almost complete equilibrium that is maintained between addition and loss, it sometimes took us some time, in the beginning of our clinical research, to reach the second stage of anesthesia. It also frequently happened that the patient never completely lost the reflexes, especially in abdominal operations, no matter how profoundly he seemed to be narcotized. As soon as, for instance, traction was made on the stomach or on the omentum, say in the case of gastroenterostomy, the patient would resist.

THE ADDITION OF MORPHIN.

On the strength of this clinical experience we introduced the administration of a hypodermic of 1/12, 1/8 to 1/4 of a grain of morphin, according to age, without atropia, one-half to three-quarters of an hour before beginning anesthesia in all abdominal cases. This procedure worked like a charm, so much so that a few months later, in the fall of 1899, we made this hypodermic administration of morphin prior to anesthesia a standing rule in every case, no matter what the nature of the operation.¹⁵ This wrought immense improvement. Induction of anesthesia was more speedily accomplished and the second stage quiet; much less of the drug was required. If the reflexes were still pronounced in spite of the previous hypodermic injection, an additional dose of morphin of proportionate amount was injected during the operation. This had the desired effect, even in alcoholics, who by this means respond favorably to anesthol administration.

Still, in combination with morphin, anesthol must be continuously administered, drop by drop, during the entire course of the operation. If this be not done some patients will begin to retch or to vomit, just as we are accustomed to see it after the use of other anesthetics, particularly chloroform. If, in such an event, the amount of anesthol administered be gradually increased the vomiting during the operation promptly ceases. This phenomenon has been observed in every instance.

With the continuous drop method and a previous hypodermic of morphin not much of the drug is required,

and the patient may be kept under its influence for hours with a comparatively small amount. Salivation and mucous râles never occur. There is no cyanosis. The patients appear to be in a deep natural sleep. Awakening is usually quick, just as was observed with Schleich's mixtures. The patients regain their mental faculties in an astonishingly brief space of time; they often awake while still on the operating table and intelligently respond to questions. Since receiving a preliminary morphin injection they now first sleep for a while after they come out of the anesthesia, but can be easily aroused.

SEQUELÆ.

As to sequelæ: vomiting is varying. I have had many patients who did not throw up a single time; others, again, vomit just as often as frequently happens after chloroform or ether narcosis. On the whole I think, however, that vomiting after anesthol is rare, and at no time as persistent, compared to the frequency of its occurrence after the administration of other anesthetics. Headache, general malaise and general systemic affections, so often witnessed after chloroform or ether anesthesia, are very rarely met. Not in a single case have I seen bronchitis or pneumonia as a result of anesthol narcosis. In a very few instances the symptoms of a previously existing nephritis were temporarily slightly increased. Heart, lung and kidney affections were never considered a contraindication to the use of anesthol. Of course, wherever local cocain infiltration or spinal anesthesia seemed indicated it was always employed.

DEATHS UNDER ANESTHOL.

In a series of many hundreds of cases operated on within the last four years there have been two deaths during the anesthesia, and these occurred at the end of the operation. Both were operations on hospital patients on the kidney. One was in a man with a large horseshoe kidney and total suppression of urine for six days in consequence of impacted ureteral stones. The operation was rather prolonged, resection of the eleventh and twelfth ribs being necessary in order to bring a very large hyperemic and edematous organ outside of the wound. The obstructed ureter was cleared first, after high ureterotomy; but a number of faceted stones in the calices of the kidney could not be extracted, though the wound had been lengthened into the pelvis. Therefore, section cut of the kidney was made. The assistant compressed the renal artery well, but failed with regard to the vein. A gush of venous blood was followed by sudden absolute anemia of the divided kidney-surfaces. The face of the patient likewise turned pale and the pupils became dilated. All our efforts to restore the action of lungs and heart proved futile. The patient had died. Autopsy was refused. Death seemed to me due either to sudden aspiration of air through one of the very large branches of the renal vein or to true shock. The administration of anesthol had been stopped fully ten minutes before this accident.

The other death occurred during a nephrectomy performed on a much emaciated young woman with an advanced tuberculosis of the uropoietic system. When ligating the pedicle of the kidney the patient showed signs of awakening and became restless; deeper anesthesia was ordered. Suddenly respiration and pulse ceased. All our efforts at resuscitation were in vain. Here, too, autopsy was refused. It is possible that the sudden administration of a larger quantity of the anesthetic towards the end of a difficult operation proved too much for the patient's general condition, and suddenly

15. It is highly interesting to me to read in the report of the proceedings of the Congress of German Surgeons, in 1901, that Mikulicz advocates the administration of a hypodermic of morphin previous to inhalation narcosis.

increased the shock to a point where medical help was powerless. I feel confident, however, that the result would have been the same with any other kind of anesthetic.

OBSERVATIONS OF DR. GUTH.

Dr. William C. Guth of New York, who has conducted the anesthesia in the greater number of my private patients outside of the hospitals for the last eleven years, and hence has had most favorable opportunities to carefully note the varying effects of the respective anesthetics used from the very beginning to date, states his opinion regarding anesthol as follows:

Since Oct. 15, 1898, I have administered anesthol in your private practice as a general anesthetic in 200 cases, and at your suggestion I took extensive notes and kept a detailed record of all these cases, noting particularly the amount of anesthol administered to induce anesthesia, the total amount of the anesthetic employed in each case, the behavior of the patient from the time of the administration of the anesthetic to return to consciousness; also noted, as far as practicable, the respiratory, cardiac and renal conditions prior to, during and following such narcosis. In addition I have made such observations and entries in the record as were suggested and outlined by you.

Having had, therefore, during this period (3½ years) the opportunity of carefully noting the effects of anesthol, we are warranted in drawing conclusions as to its place and value among anesthetics and comparing its action and its advantages, if it possess any, with chloroform, ether or combinations of chloroform and ether.

I have observed that anesthol, when administered by the "drop-by-drop" method (employing an Esmarch or Schimmelbusch mask, covered with sterilized gauze and oiled silk with central opening) surgical anesthesia is established in the majority of cases in about 8 minutes. In those instances in which morphin (without atropin) was administered hypodermically about three-quarters of an hour previous to the introduction of anesthesia, the primary stage of anesthesia very frequently was established in a few minutes less time. We have noted, too, and we may stamp it as one of the agreeable and distinctive features of anesthol anesthesia when so conducted (i. e., preceded by morphin hypodermically) that the stage of excitement is practically eliminated from the primary stage of anesthesia; also, that in the transition from this stage to that of the complete surgical degree the patients in every instance enter into the latter stage gradually, never suddenly or with the next inspiratory effort, as is frequently observed in chloroform administration. Neither have we noted in this transition stage any sudden fall in pulse rate, the change to the slower, fuller pulse coming on gradually. Complete anesthesia having been gradually induced, the pulse is full, slow, regular (of the chloroform anesthesia type) and the respirations regular, full and not stertorous.

In no instance has there been an increase in salivation or bronchial mucus during narcosis. The face presents a healthy color, there is no pallor, and if the anesthesia be administered on the mask described, by the "drop-by-drop" method, cyanosis never occurs. Of course, if the anesthetic be administered carelessly or poured on the mask in an indiscriminate and indifferent manner, the danger of inviting serious and possibly disastrous results from overdose threatens. To accomplish an approach to an ideal narcosis for the surgeon's purpose and that with the least risk of subjecting the patient to undue anesthetic shock, anesthol must be administered with the same care and judgment necessary in conducting any general anesthesia.

As I have stated, to obtain the most satisfactory anesthesia, anesthol should be administered "drop by drop." This term, familiar to all anesthetists, may call for elucidation as applied to anesthol anesthesia. On consulting my records you will note that on an average 8 to 10 grams of anesthol were employed in about as many minutes to induce primary anesthesia and that throughout the administration of this agent, the drop-by-drop method was continued at about the same rate,

so that, in a general way, we may say, for an operation of the major type, when complete muscular relaxation is to be maintained throughout, 60 grams of anesthol will be consumed in the course of an hour, or about one gram a minute, if administered drop by drop.

When given in the manner described, we have found in almost every instance, even in cases of prolonged anesthesia, that consciousness returns in a very few minutes after the withdrawal of the mask and frequently we have noted that the patient became fully awake and responded promptly and intelligently to questions, while still on the operating table during the application of outer surgical dressing.

Vomiting occurs in a small percentage of cases after return to consciousness; it is not of a prolonged or distressing type as far as I have been able to elicit. As with chloroform, if the patient be insufficiently under the influence of the anesthetic, retching or vomiting will occur during the administration. This condition is remedied by persisting in the administration of the anesthetic and not by pushing or crowding it.

Among cases recorded, you will note that several had chronic bronchitis or nephritis before operation, in all of which anesthol was administered with the happiest anesthetic result. There have been instances, too, of serious valvular cardiac lesion, atheromatous cases, diabetes, profound anemia and anemia with severe surgical shock, in which the anesthesia was most satisfactory and in which, contrary to what might have been expected in such instances, a better circulatory and respiratory condition was induced during the anesthetization. In but one instance, that of operative intervention for surgical kidney, I have noticed embarrassed respiration with cyanosis. This condition probably was due to the position of the patient on the table at the time of operation, for, on changing the position, these manifestations ceased and normal respiration and healthy color returned.

Résumé.—It will be found that in a patient under the influence of anesthol, respiration is slow, quiet, full; there is no excessive secretion of saliva or of bronchial mucus; the face is not flushed, neither is it pale; its color may be described as normal; the pupil is contracted as in chloroform narcosis; the pulse is slow, full and regular. Complete muscular relaxation is established and maintained. Anesthol combines the good effects of chloroform and ether and has its advantages over both as will be seen from the following: In no instance have we noticed any sudden or alarming changes in pulse rate, volume or pressure. In every instance the patient was brought to the stage of complete anesthesia gradually and progressively. Thus has been eliminated that source of concern of the anesthetist as is frequently met in chloroform narcosis, that, even when that anesthetic has been most skillfully administered, the patient at one moment appears to be but superficially narcotized while with the next inspiration or two a most profound anesthesia ensues with disturbed pulse rate and pallor. Pulmonary and renal complications have not in any case followed the administration of anesthol, and where they have existed prior to the use of it, they have not been aggravated. The return to consciousness is prompt; in fact, frequently strikingly so. The tendency throughout the narcosis is toward recovery from the anesthetic effect, not to an approach toward deeper and profounder anesthesia, hence the advisability of administering it constantly, at a suitable rate and drop by drop. We have observed no instance, even after its prolonged administration, in which the patient had to contend (in addition to reaction from surgical interference) with anesthetic shock.

CONCLUSIONS.

Summing up I would say: Believing Schleich's principle of improving general anesthesia on a physical rather than chemical basis to be correct, I consider anesthol—produced as it is in true conformity with this principle—to be the least dangerous of all anesthetics thus far known, as they are employed for regular narcosis in the daily work of the surgeon. I therefore be-

lieve it worthy of the most careful consideration of every physician employing anesthetics.

No doubt M.S. possesses great advantages over pure chloroform or sulphuric ether and is an excellent anesthetic, but in the light of the presumed correctness of Schleich's reasoning, outlined above, M.S. or any other combination of anesthetic drugs, the boiling point of which does not correspond to the temperature of the human body, can not be considered as safe as anesthol.

The improvement in general anesthesia brought about within the last few years has been manifold. Primary administration of nitrous oxid, followed by ether oxygen anesthesia, carried out by expert anesthetists such as New York may well be proud of, means a great step forward in the right direction. The same is true in regard to the efforts on the part of the various staffs of attending physicians and surgeons of our large hospitals, to create a paid position for permanent narcotizers. No doubt the future will see such experts in place in every well-conducted hospital, and thus put a stop to the jeopardizing of the lives of our patients by the inveterate method of having the youngest doctor, fresh from college, untrained and inexperienced as he is, attend to narcoses.

However, in private practice and in places remote from the larger cities, such expert anesthetizers can not always be at our disposal. The country doctor must carry the anesthetic in his valise; he can not regularly employ a second man, who carries with him the cylinders filled with nitrous oxid, nor can he himself bring along the large though ingenious and useful rubber bags, enabling the doctor to administer ether in a better and more scientific way than is possible with the paper and towel cone.

Here simpler appliances with regard to mask as well as the anesthetic are needed. Ether and chloroform administered with the help of uncomplicated masks or cones have carried the field so far. Anesthol, as has been demonstrated above, being a true solution, not a mixture, may thus well be employed in these cases in place of the former certainly more injurious pure drugs.

I should be pleased, indeed, if these lines should induce others to try anesthol, and they should get from their patients so gratifying a description of their subjective impression as I recently received from a colleague, on whom I operated at his home three times in close succession for a rapidly spreading phlegmon of hand and arm resulting from a finger infection. In each instance the anesthesia was conducted with anesthol preceded by a hypodermic of $\frac{1}{4}$ of morphin. His words to me after this threefold experience were these:

"You take it (anesthol) without knowing what you are taking, and when you awake you do not know what you have taken. It does not annoy you; it does not make you sick. It is simply a question of falling asleep and waking up."

The Need of Organization.—Dr. James C. Johnston, in the *Philadelphia Medical Journal*, says: "The worst of the many evils with which the medical profession has to contend is one of which all our national experience has taught us the folly, decentralization. It is evident throughout. Its business is worse handled than any other. Instead of trusts, in which overproduction is restrained, in which wages can be fixed and maintained, and in which the incompetent and superfluous are eliminated, it is every man for himself and the devil and his colleagues for the hindmost. This is true of its material for investigation and of the journals it supports, as well as actual practice."

FEVERS OF DOUBTFUL NATURE IN INFANCY.

PRELIMINARY CLINICAL NOTE.

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In the island of Cuba the febrile process is found with extraordinary frequency during infancy and childhood. The meaning of the fever symptom in a tropical country where typhoid fever, malaria, influenza and yellow fever exist in all their forms and varieties has always been a matter of great local interest which has given rise to lively discussions. Not over 20 years ago the diagnosis of febrile diseases was made by the methods of the old clinic, and the anatomic denominations were the ones which prevailed in the nosologic charts.

ALL FEVERS CONSIDERED MALARIAL.

At the time that little was believed in the existence of typhoid fever in this island, and when it was supposed that yellow fever only attacked unacclimated foreigners, the tendency of physicians was to diagnose as malaria all cases where a local cause to the process could not be easily found, or where it could not be referred to another well-defined general disease.

During the decade of 1880 to 1890 the existence of typhoid fever in our towns of importance was well demonstrated pathologically; but notwithstanding many persisted in denying it, continuing to classify as malaria all cases of remittent fever of longer or shorter duration. A true epidemic of malaria-mania spread itself among the physicians to such an extent that seldom a febrile process was not attributed to malaria, even when there were evident signs to explain its origin in a different way. At about that time works were published in other countries intended to exhibit the different forms and localizations of this infection of the blood.

In 1890 I presented to the First Cuban Medical Congress a paper on the use of quinin in Havana, where I tried to refute the tendency to abuse of that alkaloid, particularly in children, and I firmly denied the existence of so many cases of malaria, either as a primary disease or as a secondary process, always supposed to be associated to many other pathologic processes. A very small number of physicians supported my idea at that time.

THE VARIOUS OTHER CAUSES OF FEVER.

In a lecture which I delivered two years later to the "Sociedad de Estudios Clinicos," I initiated a discussion on the several kinds of fever reigning in this city, especially during the hot season, and which attacked children with preference, being then inclined to admit for many of them an infectious cause of intestinal origin. I tried to differentiate them from typhoid fever by their etiology, their symptoms and their course, making saprophytism and endogenic or exogenic autointoxication responsible for some of our types of tropical fevers. I called attention to the cases of typhoid fever in which autopsy did not show the characteristic lesions of Peyer's patches and only the isolated follicles of the large intestine were involved, for which reason these cases were denominated colo-typhus by the ancient writers. I pointed out besides the coincidence of infectious enteritis in infancy during the epidemic of those fevers in children of all ages and young adults, considering coloinfection, as the physicians of Lyon's school did, as an attenuated expression of Eberth-infection.

In 1893, and as a consequence of a dedication to the study of children's diseases, I presented to the First

Pan-American Medical Congress, held at Washington, a paper on "Primary Acute Entero-colitis in Infancy," in which I described the different varieties of types of gastrointestinal troubles in the first years of life, and I called attention to the frequency and predominance among us of the eclamptic, cerebral, gastric and typhoid forms of the ancients in opposition to the cholera infantum which was common in the United States and certain regions of Europe. In that work I demonstrated with facts taken from my personal experience that in that division of pediatrics I had not observed anything in Havana which had not been minutely described in other countries by the old masters of that branch of medicine.

THE INFREQUENCY OF MALARIA.

In the course of recent years it has been proved beyond doubt by means of the observation of the blood that malaria is not frequent in Havana, as I affirmed in 1890, based on the clinical and epidemiologic observation. It has also been proved that the anopheles species of mosquito is seldom found within the radius of the city, being somewhat frequent in the suburbs and much more in the country where cases of acute and chronic malaria are common.

The results of modern scientific investigations have thus brought about a change in the ideas regarding the nature of our fevers. To-day it is accepted in a general way that malaria is not so frequent in Havana; that typhoid fever exists in greater proportion and that, on the other hand, there is a large number of febrile patients in which neither malaria nor typhoid fever can be diagnosed, not only on account of the clinical signs, but also by the constant negative results of the hematologic analysis, as far as Laveran's parasites and agglutination tests are concerned.

The fact that the Island of Cuba is one of the main foci of yellow fever introduces a new element of discussion in the etiology and diagnosis of infantile fevers, inasmuch as clinical and epidemiologic demonstrations have clearly shown the receptivity of the natives, denied for such a long time, for that dreadful disease.

THE DIAGNOSIS COMPLICATED.

I have thought it necessary to make this historical sketch in order to show how divided the opinion of physicians about the nature of our tropical fevers has always been; also to point out the difficulties surrounding the diagnosis of infantile pyrexias in a country where malaria, typhoid fever, influenza and yellow fever exist in their usual forms of epidemic exacerbations, and, where it is necessary to admit at the same time the existence of fevers as yet undetermined, and which have their origin in the digestive tube and which the developing modern science accepts in all other countries since the intestinal autointoxication doctrine was established to explain the origin of general and organic troubles similar to those produced by other better known specific infections.

THE GASTROINTESTINAL FEVER.

The group of fevers which I intend to describe here constitute two principal types, one of rapid, the other of slow evolution. Both are common to all periods of infancy and childhood, but the younger the child the more frequently the rapid evolutive forms occur. The first type is characterized by feverish accesses most commonly of a depressive rather than of an excitative nature. The disease in many cases attacks the child unawares when he is in excellent state of health; but it is frequently

preceded by digestive derangements, diarrhea and simple indigestion, the gastrointestinal symptoms being always more or less apparent. At first vomiting and constipation may exist or yellowish, greenish, thick mucous stools accompanied by redness and irritation of the anus. The tongue is slightly coated and if the child is traversing the dental period stomatitis and throat inflammation may exist to a certain degree. In some cases the symptoms mentioned do not exist, the only phenomena apparent being certain sensibility experienced on pressure of the abdomen, somewhat intensified on the region of the liver and accompanied by muscular contractions.

From the first stage the temperature rises to 104 or more. During the first day of the disease the thermic cycle is sustained or continuous, or interrupted by slight descents followed by new rises. During the succeeding days the temperature follows a different course dependent on the evolutions taking place in the morbid process of the disease, whether in the direction of recovery or death. In the first case the fever assumes a remittent character and in a few days completely disappears together with all other symptoms which gradually disappear at the same time. When the process of the disease must certainly end in death the temperature has a marked tendency to continuity, the cerebral symptoms grow more intensified, convulsive phenomena appear accompanied by coldness of the extremities and suppression of the urine. The little patient may die in the course of 24, 36 or 48 hours.

The causes which in Cuba have always originated discussions on the nature of these cases are:

1. The belief in the prevalence of endemic paludic germs.
2. The possibility existing at present that they may constitute syderant types of yellow fever.
3. The absence of phenomena in the digestive apparatus frequently observed in the early period of invasion of the disease.

In other countries the differential diagnosis of these cases is made on malarial infections, typhoid infections, acute cases of influenza, cerebrospinal meningitis, primary tubercular meningitis, or secondary meningitis of rapid evolution; but in all of them the influence of intestinal infection on the origin of these pathologic cases which are so frequent during the first stages of life, is to-day recognized.

Marfan, Saint Philip, Comby, Escherich, Baginsky, in Europe; Booker, Jacobi, Starr, Holt, Crandall, and many others, in America, have described the rapid type of these intestinal infections. Modern doctrines compel us to classify these cases as fevers whose nature is still undergoing due study and investigation, so as to bring them to the rank of definitely specified infections. But they correspond exactly to the severe eclamptic, cerebral, meningitic or convulsive forms of acute enteritis, or enterocolitis which are described by such authors of old text books, as: Bouchut, West, Trousseau, Rilliez and Barthez, Meigs, who pointed them out as a very frequent occurrence during the first two years of life. The diseases are the same. The only difference to be observed is in the denomination which varies in accordance with modern theories held as to its etiology and pathogenic mechanism.

REASONS FOR THE GASTROINTESTINAL FEVER THEORY.

In the Island of Cuba, and above all, in the City of Havana and other localities where malaria is not so frequent, I can assure, after more than twenty years' experience, that the majority of these cases of acute infec-

tions have in infancy a gastrointestinal origin owing to the following reasons:

1. The etiologic investigation allows us to discover among the antecedents of the case, more or less serious transgressions in the dietary hygiene, on the strict observance of which I have greatly insisted in my work on acute enterocolitis, published in the "Transactions of the first Pan-American Medical Congress" (Vol. II, p. 1343). I will here add that in many instances the mothers absolutely deny said origin, but clinical observation reveals abnormal discharges. In some cases they confess the fault incurred and later the exact causes of the intestinal derangements can be discovered.

2. The epidemiologic investigation shows, on the other hand, that the disease is more frequent during the warm weather and coincides with the development of fever of typhic nature, with the different types and varieties of gastrointestinal accidents, in many children under two years of age, and with the remittent prolonged cases of fever in children above that age. Its frequent repetition observed in the same child and always obeying to the same cause, dissipates all idea of typhoid or yellow fever; diseases which do not attack the same person twice in accordance with the opinion generally established and admitted.

3. The bacteriologic examination demonstrates the existence of great number of *Bacillus coli communis* in virulent condition, as well as of other saprophytes in the potable waters of Havana. Very frequently unboiled water is administered to nursing children.

4. The hematologic examination reveals the absence of plasmodies in the blood obtained from these small patients as well as the absence of the serum reaction of Widal.

5. The treatment by means of quinin though administered hypodermically, is absolutely inefficient. The children inevitably die while taking quinin unless use be previously made of intestinal eliminators. The greater number of cures and the rapidity with which they are affected depend evidently on the energetic administration of calomel, castor oil or other laxatives, the use of antiseptics and intestinal injections, stimulants of nutrition, and rigorous hygienic diet.

CLINICAL CHARACTERISTICS.

Very frequently the fever reappears owing to some neglect of the dietetic plan during convalescence and again yields under the same therapeutic treatment. The inadequate, defective or tardy treatment, the lack of compliance with any detail of the medical prescriptions, physical weakness on the part of the child to resist the disease, intensity of the toxemia owing to the retention of toxic substance in the higher portion of the intestinal canal, due to the atony of the muscular coat, hereditary tendencies or renal insufficiency, are all circumstances which contribute to aggravate these cases, originate secondary infections, and occasion the fatal end of the disease.

The second type of these fevers comprises the cases of slow course. The persistence of fever constitutes the ruling feature of this group. Together with the febrile symptoms gastrointestinal troubles are developed as well as troubles of the other organs without there being any constant relation between the former and the latter.

The disease as a whole reproduces the clinical characteristics of an incomplete typhoid fever, and it may last from one to four weeks, there being cases of longer duration.

The thermic cycle varies greatly: the type of subcontinuous fever is very common during the first and second day, followed by remissions which become more and more pronounced in the subsequent days. There may be accesses every two days and periods of abatements lasting one, two or three days followed by a new rise in temperature which generally occurs together with an aggravation of the intestinal symptoms. Therapeutic intervention directed against the gastrointestinal states always modifies the course of those cases. At other times a moderate and rather regular remittent fever is observed which lasts for many days without any more symptoms until suddenly febrile paroxysms present themselves which then become complicated with cerebral phenomena and may be followed by death with all symptoms of toxemia. In other little patients the fever maintains its remittent character for many days and then diminishes gradually in an irregular way.

The digestive disorders accompanying the feverish syndrome may vary from the mildest form to the predominance of gastrointestinal localization of certain intensity. The tongue is red and somewhat desquamated or slightly coated; there is vomiting of mucous matter, fetid breath, anorexia and thirst; the stools have a semi-fluid consistency of greenish yellow color, grumous and mucoid, very foul at first and occasionally like those of dysentery. The urine is turbid, loaded with uric acid, urates and sometimes mucin or albumin. Usually the stools turn yellow and lose their offensive smell.

The visceral infarctions are frequent; the liver is almost always augmented and its consistency may reach that which is observed in cirrhosis. The spleen may also be enlarged, but this is less frequent. This fact may occur at the onset of the disease. Finally there are cases where both viscera are in normal state from the beginning to the end of the disease.

The exploration of the abdomen shows pain and distension at the level of the transverse colon in the ascending and descending colon, these symptoms disappearing later on more or less intense fever remaining as the only manifestation of the pathologic process.

Not unfrequently cases are observed which act in a normal way, and with tendency to constipation, but oily laxatives determine the expulsion of mucosities and the attenuation or temporary disappearance of fever. This result at other times can not be obtained without a change in the alimentation.

The type of enteritis of typhoid form of the ancient writers is recognized when studying some of these pathologic classifications in children under two years of age. In other children the morbid process has the type of the gastrointestinal troubles of the ancient writers, or that of gastric fever, which traditional observation separated from the similar form of typhoid fever and malaria.

The diagnostic study of every fever is one of the most difficult ones that may present themselves in pediatric practice. Before the birth of bacteriology the clinical and epidemiologic criterion served as a base to distinguish general diseases among themselves. Often the diagnosis was left uncertain when it could not be confirmed by means of pathologic anatomy. Bacteriologic discoveries have afterward solved many etiologic problems; but doubtless the negative result and the insufficiency of our knowledge in that respect have contributed to a certain extent to throw more confusion on the etiologic conception of some morbid processes. Besides, modern procedures of investigation and experimental demonstrations have revealed that side by side with the better known specific infections there are others which are not

classified as yet. This has given rise since the notable work of Bouchard, to the doctrine of intestinal auto-infections, by which it is tried to explain at present the nature of certain obscure, incomplete or atypical processes which according to the epidemiologic criterion were systematically included in either of the two great pyrexias, typhoid and malaria, and also in yellow fever in countries like ours. In order, therefore, to properly solve the diagnostic problem we must be more cautious than ever, trying to resort to every possible source of positive information; clinical observation, first, laboratory work afterward and a minute etiologic investigation comprising the patient and the surroundings.

Having thus excluded malaria, grippe or typhoid as origins, disregarding the other processes, local or general, capable of producing fevers of a similar course in children, it may be admitted that the forms of slow course that have been described are, in the same way as those of rapid course, consequences of putrefactions that take place in the intestinal tube. These putrefactions may be caused either by direct introduction of morbid agents with the food or by the increased virulence of the micro-organism habitually living in the intestine in a saprophytic state, due to faults in the dietary or to other external influences. The effects are the same: increased intestinal fermentation, production of toxic element and consecutive autointoxication after their absorption in the circulatory system. The feverish syndrome represents a functional trouble depending on an infection which takes place on the surface of the mucous membrane without leaving a trace of any kind. At other times the infection causes more or less extensive injuries which may be propagated to other organs of the digestive apparatus and to the remainder of the organism.

This way of thinking agrees with the work carried out in recent times by Hayen, Lesage, Thiercelin, Escherich, Baginsky, Booker and many others on the part acted by divers micro-organism in the production of infantile gastroenteritis.

An inspection of medical literature shows that the same doubts have arisen in all parts of the world about the classification of those feverish types, which differ in many respects from all the other groups of defined specific infections.

Kelsh and Kiener, Ferée and Vincent in Algiers have argued against those morbid states described by Sesary under the name of gastrointestinal fevers. Legrain, more recently, has attributed them to the colon bacillus and he affirms that this agent may give rise to a whole series of cases of remittent fevers which offer a scale of seriousness from the simple mild form to the syderant form resembling yellow fever. Manson studied them among "unclassified tropical fevers." In Italy, Tomasselli, Cantani, Fazio and others discussed them many years ago as a *sui generis* infection. Fedé, of Naples, describes it with the name of "gastrointestinal infection of infancy," and it is very common to find allusions to those diverse types of fevers in the medical literature of the United States.

The expression "entero-septic fever" proposed by Dr. Tomás, of Matanzas, has become very usual in Cuba, and it is certainly preferable, as it has the advantage of expressing the location and nature of the pathologic phenomena without making reference to any specific micro-organism.

In conclusion, the feverish process during the infantile period of life is very frequent in the Island of Cuba. In a great number of times fever owes its existence to the same infectious diseases which have been described by

observers of other countries. Ignorance of this fact has been one of the causes which have contributed to mislead medical opinion on the nature of infantile pyrexias. As a rule, these pyrexias have a tendency to reveal a similar clinical expression during early stages of life. In other words, there does not always exist a constant relation between the infectious agent and the clinical phenomena exhibited by the patient. Hence the diagnosis is extremely difficult and requires minute and wide information of a clinical, etiologic, epidemiologic and experimental order to reach with more certainty the scientific truth.

But it can not be denied that most of the infantile fevers come from intestinal infection. These fevers which I have classified in two groups, according to their duration, correspond to the same processes that in the ancient nosologic classifications were called acute enteritis or enterocolitis, and which at present are named by some writers infectious gastroenteritis or infectious enterocolitis; also intestinal fevers or intestinal infections. Endogenic or ectogenic infections of the intestinal tract are the ones which give rise to the feverish types already described; the septicemic or rapid and the enteroseptic or slow, according to the predominance of the symptoms of autointoxication of the organism or whether more or less extensive inflammatory lesions on the mucous membrane of the intestine are produced.

The prognosis in these fevers depends on the virulence of the germs producing them and on the amount of resistance opposed to it by the organism of the child; but to a great extent it is secondary to the opportunity and energy of the treatment employed as well as to the experience acquired on infantile diseases.

A CONTRIBUTION TO THE PATHOLOGIC HISTOLOGY OF SYPHILITIC ETHMOIDITIS.

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BOSTON.

Among the causes of chronic inflammation of the ethmoid bone syphilis has long been considered to play a prominent part. In the cases, however, which usually come under observation the process is well developed, and it is a rare experience to be able to follow the condition from the beginning. The following case is, therefore, of particular interest, especially in view of the fact that a histologic examination of the anterior portion of the middle turbinate was made at an early stage of the disease.

NARRATION OF CASE.

P. J. B., a man 30 years of age, was referred to me by Dr. H. W. Kilburn, Oct. 25, 1899, with reference to a possible source of irritation in the nose, which might cause inflammation in the conjunctiva of the right eye. Examination showed an enlarged right middle turbinate, the nose and throat being otherwise essentially normal in appearance. The patient's previous history was negative.

The anterior end of the right middle turbinate was snared, and found to exhibit cystic enlargement of the bone. November 1, a portion of the stump remaining was removed with the conchotome. November 16, examination of the right middle turbinate showed an irregular swelling at the margin of the stump which had the appearance of granulation tissue, and which was of such size as to occupy almost the same region as the original anterior extremity. This was removed by the snare. November 21, the granulation tissue had reappeared, and by December 5 had exceeded even the original size of the turbinate. The patient was then put on protoiodid of mercury, one quarter grain, t.i.d. December 19, examination showed the growth to have become smaller, and

exhibiting a cleaner, smoother surface. January 1, iodid of potassium was added to the mercury. The growth continued to diminish in size, and by May 2 was no longer visible. May 22, there was an ozenic odor from the nose, and a portion of dead bone from the region of the right ethmoid was removed. June 19, the region of the right ethmoid showed much irregular retraction and distortion, but there was no odor or discharge. The patient was continued for the next few months on small doses of iodid of sodium. October 1, there was again a polypoid swelling of the right middle turbinate, with purulent discharge, together with a bad odor. Mercury was again administered, in combination with the iodid, and was followed by a disappearance of the polypoid swelling and of the odor. The patient has since that time taken 10 grains of iodid of potassium or sodium, 3 times a day, together with mercury at intervals. There has been no return of the polypoid swelling of the right middle turbinate, and he has been otherwise in excellent health.

Histologic Examination.—The specimen removed Oct. 25, 1899, of the right middle turbinate showed a hemispherical wall of bone, lined on its interior with mucous membrane, and covered externally by swollen erectile tissue and mucous membrane, differing macroscopically in no essential particular from the appearances found in ordinary cystic degeneration of the middle turbinate. The specimen was hardened in Zenker's fluid, and imbedded in paraffin.

Specimens stained with alkaline methylene blue and eosin show, under a low power, the epithelium of the interior and external aspects to consist of flattened pavement cells. In places, the epithelium exhibits an invagination, the walls of which are lined with columnar cells. The epithelial cells are everywhere penetrated with polynuclear leucocytes, particularly in the regions of the invaginations. Below the epithelium there is seen to be a marked proliferation of the connective tissue cells, and of the endothelial cells of the blood vessels. The region immediately below the epithelium contains large numbers of polynuclear leucocytes, which extend downward, though in diminishing numbers, to a point about midway between the epithelium and the periosteum. These are accompanied by lymphoid cells, plasma cells, and a small number of Mastzellen. The mucous glands present no characteristic changes, and no abnormal infiltration of cells in the vicinity. In the submucous region, the most striking changes are seen in the connective tissue. This exhibits a marked proliferation, increasing in intensity, as one advances in the direction of the periosteum. Sections stained with Mallory's triple connective tissue stain show characteristic blue connective tissue fibers to begin a short distance below the mucous membrane, and to increase in density and abundance rapidly. The deeper mucous glands are surrounded on their inferior surface by connective tissue of considerable density. The blood vessels in the regions of the most marked connective tissue proliferation show a thickening of their intima, resulting in a narrowing of their lumen, and giving the characteristic picture of obliterative endarteritis. The periosteum presents a marked proliferation as shown by the closely-packed osteoblasts, and covers irregular prolongations and digitations of the bone. This is chiefly marked on the distal surface of the bone, which in cross section has the appearance of being broken up into numerous irregular islands. The proximal aspect of some of these islands of bone shows but little alteration from the normal, although others are completely surrounded by numerous osteoblasts. Here and there, particularly on the proximal aspect of these islands of bone, osteoclasts are seen, although apparently not more numerous than in middle turbinates of essentially normal character.

In reviewing the description of these appearances we see that the tissue changes consist essentially in a proliferative periostitis, with a new formation of bone in the form of irregular excrescences, in association with a proliferation of the connective tissue in the vicinity and of the endothelial cells of the arteries, leaving in places an obstruction of their lumen. These changes partake of the character of a granulation tumor rather than of a

gumma, and are to be referred to the class of syphilitic new growths termed syphiloma.

DIFFERENTIAL DIAGNOSIS.

The differential diagnosis in this case could hardly have been made clinically, previous to the rapid recurrence of the granulation tissue, after each operation. Even then it is not very uncommon, in the writer's experience, for recurrence of granulation tissue to take place after operation, in cases of ethmoiditis, due to influenza. In the case under consideration the prompt effect of anti-syphilitic remedies established the diagnosis beyond question. From the histologic standpoint it is probable that a diagnosis of syphilis could be made with a reasonable degree of certainty. In cases of ethmoiditis following influenza, and in those cases of polypoid enlargement of the middle turbinate, of unknown, but at least of non-syphilitic etiology, we find, to be sure, a proliferation of the periosteum, with a new formation of bone, but by no means such marked changes in the connective tissue or in the arteries.

It is to be hoped that in cases of ethmoiditis of a similar nature investigators will not only bear in mind the possibility of syphilis; from a clinical and therapeutic point of view, but will subject the excised tissue to careful microscopic examination.

Quackery Quarantine.—The citizen has as much need of quarantine against ignorance and quackery in medical practice as he has gained against all forms of contagion.—G. F. Johnston, Pres. Kan. Board of Regis.

Quadruple Pregnancy with Two Ova.—Baudouin describes (*Gaz. Med. de Paris*) a recent delivery at Paris in which one ovum contained three fetuses, two of them forming a sternopagus, all of the female sex, and one of them surviving. After their delivery a second bag of waters ruptured and a stillborn male child followed.

Lectures on the Physician's Relation to the Community.—The students of Harvard Medical School, says the *Boston Medical and Surgical Journal*, have, on their own initiative, arranged for a series of evening lectures to be given by prominent men, not necessarily physicians, on the general topic of the relation of the physician to the community. This action is noteworthy from several points of view. It shows, in the first place, a growing interest among students of medicine in the broader aspects of their professional work and in the responsibilities which it is sure to entail. Such a movement on the part of medical students, popularly supposed already to be overburdened with lectures, could hardly have occurred ten years ago. To those who have watched the development of the last few years, however, it comes as no great surprise. The students are certainly becoming more and more independent in thought, and are standing more in judgment on the work which they are called on to do and on the teachers who direct it. The results have been in every way salutary, both as regards teachers and students. The desire of a large body of students to provide certain lectures for themselves furthermore points toward a definite need, which they are feeling is not supplied them in the regular course. They want, broadly speaking, to learn from men of experience of their future social and ethical relations to the communities in which they may happen to be placed. This is evidence that they receive no such instruction in their ordinary undergraduate work, which, we believe, is the fact. This leads us to speak of a distinct lack in medical education, and that is, the direction of students in their relation to patients and others whom they must later come in contact with in their professional work. No attempt is made to teach the ethics of medicine except by precept and example, a good but not a sufficient method. Students of medicine certainly need instruction in this subject, a fact which the Harvard students have appreciated.

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THE DIPLOMA VS. EXAMINATION.

An esteemed correspondent offers in this issue some criticisms on a recent editorial in these columns on the above subject, and asks for reasons for the position we assume. Reduced to a sentence, our critic objects to examination by state boards, and wants the medical college diploma recognized as the only necessary qualification for the right to practice. In other words, he would have us go back to the old conditions. Arguments against this position have been given over and over again in the past in medical societies, in medico-sociologic discussions and in medical journals. It would seem useless to go over these again, or to point out the incorrectness of the claim that instructors are in a better position to judge of the fitness of a man to practice than a company of individuals "armed with a series of stock questions," when by "instructors" are meant the faculties of medical colleges, the large majority of which exist for purely commercial purposes, and by "a company of individuals" is meant a state examining board.

In the main we agree with our correspondent that it would be easier and, possibly, more "in harmony with the economic and centralizing spirit of the time, for a small number to authoritatively investigate and pass on the educational merits of fifty or one hundred institutions of learning occasionally, than to adopt the task of perpetually investigating the qualifications of thousands of individuals." If this body could be a national one, with full authority in all the states, composed only of thoroughly competent and disinterested men, and absolutely secure against all local, external, and political influences, it might be that the problem would be solved. But how are we to select such a competent body, and who is to give them the right "to authoritatively investigate and pass on" the merits of these institutions? There would still remain the question how to dispose of applicants from institutions not in the recognized list, and how to meet the pressure for such recognition. These, perhaps the most embarrassing problems, would still remain unsolved.

The great obstacle in securing satisfactory legislation comes from the fact that such legislation is a function of the state and not of the national legislature. And here we are reminded that the average state legislature is prone to be decidedly too lenient with its own institutions and, if possible, to favor these as against those out-

side of the state. Further, no state can rightfully deputize a matter involving the health and welfare of its citizens to an indefinite number of irresponsible bodies, such as college faculties, which are outside its limits and in no way subject to its jurisdiction or to that of the national government. A diploma from a few colleges means something, from the majority it means nothing, unless it be that the holder has paid a certain number of dollars into the treasury of the institution that granted it.

No other civilized nation, so far as we know, grants the right to practice on a diploma granted by a private teaching institution, and even Uncle Sam guards his soldiers and sailors, for it is well known that no one can be admitted to the medical corps of the Army, the Navy, or the Public Health and Marine-Hospital Service on the strength of a diploma alone, no matter how high the standard of the college issuing it.

We hardly see that the requirement of a diploma as a prerequisite to examination is a confession of weakness. The diploma is supposed to be an evidence of a certain amount of medical training and clinical instruction and the requirement of this or of some evidence that the applicant has had clinical experience should be insisted on. Many states, however, do not require a diploma, depending entirely on examination. Our correspondent's reference to "A central examining board and its associate committees" is of local import only, as we presume he refers to the pending legislation in Illinois.

We recognize as a fact that but few of our state examining and licensing boards are constituted as they should be; that written and oral examinations by means of questions and answers, and without practical clinical demonstrations are decidedly unsatisfactory, and that for an already licensed physician to have to pass an examination when he chooses to move to another part of his own country, if this should happen to be another state, is worse than outrageous. But, in spite of all this, we can not think of going back and of giving to commercially controlled medical colleges the right to say how much or how little a man or woman must know before entering on the responsible duties of a practicing physician.

The question of medical education and with it that of protecting the public from incompetent practitioners, charlatans and impostors, is one for our profession to solve and, as stated above, the question is seriously involved from the fact that we have to recognize fifty different legislating bodies. For years we have been improving, the standard has been gradually raised, and we can not afford to go back now. We must, however, recognize the necessity for meeting the present unsatisfactory conditions, especially that of granting a man the right to practice all over his own country if he has the right to practice in any part of it.

CHLOROMA, OR GREEN TUMORS.

There are few parts of the human body that have received more attention from investigators and clinicians during recent years than the lymphoid structures—spleen, lymph glands and bone marrow. The numerous contributions relating to splenic anemia indicate a growing interest in the disease as well as a general spread of a knowledge of its clinical and anatomic characteristics. A commendable, critical spirit has arisen with regard to Hodgkin's disease, and cases are repeatedly submitted to laborious inquiry to determine their tuberculous or non-tuberculous nature. The researches by Warthin and others on the hemolymph glands, the study of the hematopoietic structures in acute infections, and the increasing importance of these organs in the production of immunity have greatly advanced the work in this field. In this field of diseases of the blood-forming organs there is much to attract the clinician and to stimulate him to careful and complete observations of the many interesting forms of disease that here may meet him.

Although it may be determined at some future time that chloroma is simply a rare form of other and better known processes of disease, the recent accounts of two cases by Rosenblath and Risel,¹ together with their summary of the literature, leave a strong impression that this condition will always command a separate place on account of the clinical features. Notwithstanding that the first report dealing with these grass-green, yellowish or grayish-green tumors was made nearly one hundred years ago, only about 20 cases have been recorded since. In most of the cases double or unilateral exophthalmus is one of the earliest symptoms and naturally has frequently led to the consultation of ophthalmologists. It is caused by development behind the eyeball of tumors which soon become palpable. Exophthalmic goiter has been suspected or diagnosed in a number of cases. Tumors develop elsewhere also, as in both pseudoleukemia and leukemia, but with a marked predilection for the periosteum, especially of the skull bones; occasionally the long bones, sternum or vertebrae are affected. In this feature of chloroma there will be seen a close resemblance to those other rare tumors of bone, the multiple myelomas, which are also allied to leukemia and pseudoleukemia. In many cases of chloroma a hemorrhagic diathesis has been observed, and in a few cases changes have been found in the blood similar to those of acute leukemia.

The disease runs a short course and terminates fatally. In some of the cases a green coloring material appeared in the urine. In the two cases considered by Rosenblath and Risel the so-called Bence-Jones reaction of the urine for albumoses was absent. The peculiar color of the growths is not appreciable unless portions of the more accessible tumors are removed for examination; in some instances operations, such as evisceration of the eyeball, have revealed this striking characteristic.

Various theories have been advanced to explain the pigmentation of the newly-formed tissue, but as yet no satisfactory solution of this question has been reached; the theory of metamorphosed pigments from the blood, however, has numerous points in its favor. It is to be regretted that there are no accounts of bacteriologic investigation of the cases reported by Rosenblath and Risel for this aspect of chloroma merits thorough examination. The attention of the profession generally should be directed not only toward the recognition of these cases, but also toward securing complete investigations.

UNDERGROUND TRANSIT AND PUBLIC HEALTH.

The question of transportation in our great cities is one that is agitating public opinion and becoming more or less an issue in local politics. The inconveniences of obsolete systems not progressive *pari passu* with the growth and needs of the cities call more and more for better facilities, especially in view of the modern tendency to concentration of population and expansion of municipalities. The inconvenience, however, of permanent surface railway tracks in the business centers is such that some substitute is constantly being advocated. Surface railroads are going out of date in some of our larger cities and elevated and underground transportation are being advocated. New sanitary questions will be raised by these changes and it is worth while to make some inquiry for the benefit of the public as to all the possible dangers.

The subject is taken up by Dr. Louis C. Parkes in the Public Health article of the *London Practitioner* for February. He points out the dangers to health from the confined air in subways. He shows that the amount of carbonic acid gas is increased in the atmosphere of the railway tubes and that the sanitation of the Central London Railway underground line, as shown by most recent investigations, is very bad, especially at the times when the traffic is greatest. Air of the carriages has been found to contain as much as 15 to 25 parts of carbonic acid per 10,000, or four or five times as much as in the atmosphere. While this is unquestionably deleterious to health, even though breathed for a comparatively short time, there are still other dangers to which he calls attention in subway traveling, such as the danger in the warm summer and the cold winter months alike of bodily chilling. In hot weather the traveler changes suddenly from a warm street to a much colder atmosphere and in winter the reverse happens. Then, again, the air is so confined that it can not purify itself of carbonic acid gas, and also contains a large amount of organic material and the dangers of contagion, tuberculous infection, etc., are vastly increased. It is impossible to prevent overcrowding of these cars at certain periods of the day, and this greatly aggravates the conditions. He also speaks of the tendency of large numbers of people living adjacent to these routes and traveling by tube to their working places and back again to their

1. Deut. Arch. f. Klin. Med., 1902, lxxii, 1.

homes, living their whole lives in an artificial atmosphere. What can be expected, he asks, from such a mode of existence but physical degeneration and lowering of the national health?

While this is at present more especially a London problem and one hardly yet applicable to American conditions, except possibly in New York City, it is still one to which, in view of future possibilities, we can give our careful attention. He thinks there is danger of the passive and little-assertive Londoner being rushed into costly and ill-digested schemes of multiple "tube" transit. It is a pretty generally acknowledged fact that in matters of public grievance the English are better "kickers" than the Americans, and we would do well to take some of this warning in this country where underground transit projects are being considered. The question of rapid transit in our municipalities is very far from being settled. We should utilize the experience of older countries where methods like the underground railways, etc., have been long in use and have afforded chances for observation of their effects.

MICHIGAN BOARD UPHOLD.

It is well known to our readers that the Michigan State Board of Registration has had trouble almost from the beginning with a certain class of practitioners, and more especially certain of the graduates of the Armstrong diploma mills of Chicago. The strife has been carried up through the courts until it finally reached the highest tribunal in the land, and a decision has only recently been handed down. This was delivered by Judge Brewer and not only establishes a precedent, but fixes the status and authority of such medical boards, at least in certain particulars. The judge says in part: "The power of the state to make regulations providing for determining the qualifications for those engaged in the practice of medicine and punishing those who attempt to engage therein in defiance of such statutory provision, is not open to question." The state courts are the tribunals in which the question of the constitutionality of the acts as regards the state constitution is to be decided, and in this decision it is said that there is no decision known in the federal constitution forbidding a state from giving to a tribunal, whether it be called a court or a board of registration, the final determination of a legal question. Certain minor points which have been brought up by the plaintiffs were also settled, and the decision as a whole is a valuable one as establishing jurisdiction of registration boards and the legality of medical practice acts.

THE THERAPEUTICS OF THE CACODYLATES.

Within the last few years much has been published in regard to certain special arsenical compounds and their therapeutic value. These compounds, cacodylates, were found to be practically non-toxic in large doses, and it was claimed that they produce many of the therapeutic results of the basal element. Some recent investigators, however, have thrown discredit on the therapeutic efficacy of these drugs, claiming that they are practically inert in the system. They have, nevertheless,

been found to produce certain symptoms, not those of ordinary arsenical preparations, which are of disadvantage. More recently, to obviate these latter disadvantages, still another organic compound of arsenic, disodic methyl arsenate, has been introduced and given the name of arrhenal, and has formed the subject of a number of clinical contributions. At a meeting of the Edinburgh Medico-Chirurgical Society, January 21, the president, Sir Thomas R. Fraser, reviewed the subject, calling attention to the fact that the efficacy of arrhenal had been combated, more especially its efficacy in malarial affections. He reported cases in his own practice where it had been given as a substitute for the ordinary arsenical preparations, but without the results that might have been expected were its effects those of arsenic itself. He also made examinations in order to determine why these failures occurred, as to the chemical conditions, using tests of extreme delicacy and found no evidence that arsenic was retained in the body after the administration of the drug. As in the case of the cacodylates, according to later reports, it passes unaltered. The general results of Fraser's observation were that arrhenal was practically an inert substance, that it can not produce either the pharmacologic action or the toxic effects of the arsenic ion and that, therefore, it is incapable of exerting remedial or therapeutic effects of the commonly used compounds of this substance. It seems now probable that both the cacodylates and this more recent substitute will pass into disuse unless some special properties not those of arsenic are absolutely determined. The enthusiasm with which these were at first received appears to have been unwarranted by fuller experience and may be taken as another instance of ill-judged medical faith in a remedy which is often one of the misfortunes of the profession.

Medical News.

CALIFORNIA.

Lehman Acquitted.—Dr. Charles A. Lehman, San Diego, who has been on trial charged with practicing medicine without a license, was acquitted February 19.

Will Not Change Law.—The Assembly Committee on Public Health and Quarantine has reported against the bill changing the law regulating the State Board of Medical Examiners, and providing that medical graduates must be given certificates to practice without further examination.

Plague Stamped Out.—Governor Pardee has transmitted to the legislature a message from the surgeon-general of the United States Public Health and Marine-Hospital Service, announcing that no plague has been discovered in San Francisco since Dec. 11, 1902; that searching inspections are being made daily in Chinatown and that no infected rat has been found since Dec. 8, 1902.

Births and Deaths in San Francisco.—The deaths in San Francisco during January numbered 783, equivalent to an annual death-rate of 21.44 per 1,000. The death rate for the corresponding period of 1902 was 24.96. The births registered were 544, equivalent to an annual rate of 15.91 per 1,000. Tuberculosis caused 125 deaths; heart disease, 87; pneumonia, 85; nephritis, 47; and violence, 71.

Cancer Specialist Held Responsible.—As a result of the coroner's inquest in the case of a patient under the care of S. R. Chamley, an advertising cancer specialist of San Francisco, the jury found that deceased came to her death from hemorrhage from an operative wound in the breast, through lack of knowledge of the attending physician, Dr. S. R. Chamley, and further found him responsible for her death. It also

recommended that Dr. Chamley's license be revoked for falsely certifying to the board of health as to the cause of death.

COLORADO.

Hospital Incorporated.—The Fairmount General Hospital Association has been incorporated at Pueblo by Drs. Thomas A. Stoddard, Ferdinand G. Mohlau, Charles O. Rice, and others.

Farm for Use of Consumptives.—David Brothers has given an improved farm of 36 acres, valued at \$20,000, to the Y. M. C. A. of Colorado, to be used in connection with its proposed sanatorium for consumptives. A large number of tents will be erected as domiciles for the patients, who will be expected to work on the farm in part payment of their board and lodging.

Medical Bill Amended.—The Sanford bill, which passed the house February 7, was delayed when it reached the senate, which body amended it. One of the amendments provides for a state board of medical examiners, to be composed of 12 members, six of whom are regulars, two homeopaths, two eclectics and two osteopaths. Applicants are to be examined by that fraction of the board representing their desired line of practice.

State Board of Health Reorganized.—The board met at Denver, February 19, and reorganized, electing Dr. Josiah N. Hall, Denver, president; Dr. William H. Davis, Denver, vice-president; Dr. Claude E. Cooper, Denver, secretary, and Dr. Frank N. Carrier, Canon City, treasurer. The governor has appointed Drs. William H. Davis, Denver; Frank N. Carrier, Canon City, and Edward A. Mattoon, Salida, new members of the board.

DELAWARE.

Personal.—Dr. Pietro A. M. Rovith has succeeded Dr. John C. Fahey as physician of the Italian Mutual Beneficial Society of Wilmington.

Physician as Senator.—Newly-elected Senator Louis Heister Ball, Faulkland, who has previously served his state as treasurer, and as member of congress, is a practicing physician, and was graduated from the University of Pennsylvania in 1885.

Reception to Dr. Flexner.—Dr. Joseph P. Pyle, Wilmington, gave a dinner and reception to the physicians of Wilmington, February 3, at which Dr. Simon Flexner of Philadelphia was the guest of honor and delivered an address on the serum-therapy of diphtheria and typhoid fever.

DISTRICT OF COLUMBIA.

Personal.—Drs. John T. Dunn and W. Robert Perkins, both of Washington, have become resident physicians of Emergency Hospital, as the result of a competitive examination.

University of Vermont Alumni.—The fifth annual dinner of the Alumni Association of the University of Vermont was held February 27. Dr. A. F. A. King of Washington was elected president.

Health of the District.—Report of the health officer for the week ended February 21 shows the total number of deaths to have been 135, of which 74 were white, 61 colored, number of births 76, 45 white, 31 colored. At the close of the week there were under treatment 101 cases of typhoid fever, 12 of scarlet fever, 6 of diphtheria, 8 of smallpox.

New Hospital and School Opened.—The new hospital and building for the department of medicine and dentistry of the Columbian University were formally opened February 28. The new hospital contains private rooms and medical and surgical wards, with three operating rooms and a dispensary. The new medical building has four lecture halls, each seating from 200 to 350, large laboratories for chemistry, pharmacy, histology, physiology, bacteriology, pathology and anatomy, with recitation rooms, museum, library, reading rooms, etc.

To Prevent Epidemics.—Representative Smith of Illinois has introduced a bill in the house to prevent the spread of communicable diseases in the district. The bill provides that every person in charge of any patient who is suffering from measles, whooping cough, chicken-pox or epidemic cerebrospinal meningitis, immediately after becoming aware of the existence of such disease, shall send to the health officer of the district a certificate, stating the name of the disease; the name, age, sex and color of the patient; the school which he or she has attended, if any, and the name of the physician, if any, in attendance on the patient; and designating the place in which the patient can be found. If the patient recover, the person in charge must send to the district health officer a certificate to that effect. But no person shall certify that a patient has recovered until he is free from danger of communicating the

disease to other persons. Every physician attending any patient suffering from communicable disease, immediately after discovering the nature of the disease, must notify the person in charge of the patient of its nature and that the person in charge is required by law to report the case to the district health officer. The bill makes it unlawful for any person in the district suffering from a communicable disease or from symptoms which so resemble those of a communicable disease that they can not be distinguished therefrom with reasonable certainty, or for any physician attending or examining any such patient, or for any person in charge of such patient, to do any act reasonably likely to cause the spread of such disease, or to omit the performance of any act reasonably likely to prevent the spread of such disease. Any person who violates, or aids or assists in the violation of any of the provisions of the proposed act is made liable to a fine of \$100 or to imprisonment in the workhouse for thirty days.

ILLINOIS.

Fire at Marion.—A fire which broke out at Marion, February 19, destroyed the offices of Drs. George W. Evans and Griffin Baker, Jr.

To Clear Title.—The University of Illinois has transferred to the College of Physicians and Surgeons, Chicago, the property now used as the medical department of the university. The transfer is made for technical reasons, to clear title.

Veterans Are Dying.—Statistics prepared by the adjutant-general of the department of Illinois, Grand Army of the Republic, show that in the year just closed there were 702 deaths among the 21,725 members in Illinois, a death rate of 30.8 per 1,000.

Personal.—Dr. Samuel M. Wylie, Paxton, has been elected to fellowship in the German Surgical Society.—Dr. James A. Marshall, Pontiac, declares his intention of resisting discharge as physician of the state reformatory at Pontiac, on the ground that the institution is under civil service supervision, and that no employe can be discharged for political reasons.

Hospital to Celebrate Silver Jubilee.—St. Francis Hospital, Peoria, is making extensive preparations for the celebration of its twenty-fifth anniversary, March 20, 21 and 22. In 1878 a building which cost about \$10,000 was the home of the hospital. In October, 1901, the new hospital was opened, which cost \$125,000. The institution also has branches at Bloomington, Ill., Menominee, and Marquette, Mich.

Chicago.

Widow Sues Physician.—Mrs. Mary Kerwin has sued Dr. Thomas J. Balhatchet on the charge of larceny as bailee, claiming that he withheld \$1,023 of insurance money on her husband. Dr. Balhatchet claims that he attended the plaintiff's husband, receiving in lieu of fees for medical service, promissory notes, secured by the insurance policy. He characterizes the suit as an attempt to extort money.

Personal.—Dr. Casey A. Wood has returned from a stay of several weeks in the east.—Dr. Seward P. Gibbs was struck by a cable car, February 19, and seriously injured.—Dr. Maurice F. Doty has been elected president of the Referendum League.—Dr. George E. Cooke has moved to Arlington, Ky.—Dr. Augustus L. Craig, who was recently robbed of a suit case containing valuable securities, was so fortunate as to have them recovered by the Kansas City police.

Record-Breaking Mortality.—The 713 deaths recorded during the week ended February 28, represent an annual mortality rate per 1,000 of 19.73; and the 2,570 deaths in the month give an annual death rate of 18.30 per 1,000. These figures break all records for a week in February, and the rate for the month is the highest recorded since 1882. As compared with February, 1902, however, there were 16.2 per cent. more deaths over 60 years of age and 4.6 per cent. fewer under 5 years of age.

IOWA.

The Board's Work.—During 1902 the State Board of Medical Examiners issued 538 certificates, 300 of which were issued to osteopaths. Of the remainder 211 were regulars, 24 homeopaths and 3 eclectics.

Personal.—Dr. George Kessel, Cresco, was thrown from his buggy, February 22, fracturing his left arm near the wrist and breaking his nose.—Dr. Lysle Reppert, Muscatine, has returned after a year of study in Europe.

Golden Weddings.—Dr. and Mrs. Benjamin F. Keables, Pella, celebrated the fiftieth anniversary of their marriage, February 24.—On New Year's evening Dr. and Mrs. Joseph

L. Powers, Reinbeck, commemorated their semi-centenary of married life.

Itinerant Physician Indicted.—Dr. Edwin E. Rohrabach, an itinerant rupture specialist of Chicago, arrested at Des Moines on the charge of practicing without a permit from the State Board of Health, was found guilty, gave bond of \$1,000 to appear for sentence when called on, and left the city.

Faculty Member Resigns.—Dr. Charles Henry Hoffman, professor of histology and bacteriology in the medical department of Drake University, Des Moines, has resigned because he refused to give his real name. For the same reason he resigned as censor of the Des Moines Pathological Society. He admits that he is bound by honor not to reveal his true name until he has permission to do so.

MARYLAND.

Minute Damages.—The suit of Mr. R. E. Lee Bosley of Towson, former sanitary officer, against Dr. R. C. Massenburg, for \$10,000 damages, resulted in a verdict of one cent.

Smallpox at Chestertown.—There are three cases of smallpox at Chestertown. Dr. G. W. C. Rohrer of the City Hospital has been engaged to attend them at \$10 per day, and a house is being erected near the pesthouse for his residence.

Physician Fined for Assault.—At Hagerstown, February 24, a fine of \$200 and costs was imposed on Dr. P. Elwood Stigers, Hancock, for assault on a dentist of the same place. The court said it was a most grievous offense, and that only the numerous appeals for clemency saved the accused from imprisonment.

For New Epileptic Ward.—Plans for the new epileptic ward at Maryland Hospital for the Insane (No. 2) are being prepared. The cost will be \$25,000. It will be detached from the other buildings, but will conform to them in style. The dormitory on the second floor will be 21 by 157 feet, and will accommodate about 90 patients. There will be six private rooms in each wing, and on the second floor will be a sun parlor 20 by 33 feet.

New Hospital for Eastern Shore.—The plans have been completed for a new hospital at Cambridge. Of the \$40,000 required for the purchase of site and building, Mr. John E. Hurst, Baltimore, has contributed \$15,000, the state and Cambridge each \$5,000. The site will be a bluff, the highest point in the town. The building will be of brick, in colonial style, 136 feet long, and varying from 51 feet deep at the center to 36 feet at the wings. There will be a basement and three stories and accommodations for 35 patients. The local staff consists of Drs. Brice W. Goldsborough, John Mace, Guy Steele, and Eldridge Wolff; the surgeons are Drs. Nathan R. Gorter and Thomas S. Cullen, Baltimore, and the oculists are Drs. Herbert Harlan and Henry O. Reik, Baltimore.

Baltimore.

Personal.—Drs. Frank D. Gavin and Thomas S. Cullen have returned from a pleasure trip to Jamaica.

The Week's Deaths.—The mortality was nearly normal last week, the death rate being 19.90 per 1,000 per annum for the whole population. Pneumonia caused 42 of the 212 deaths, bronchitis 11, grip 7, and measles 4.

Tuberculosis Mortality.—The statistics of the Tuberculosis Commission show that the death rate in Baltimore is nearly twice that of the state in the cases of whites, and that the mortality among negroes is twice as great.

Abortionist Sentenced.—Dr. William B. Hawkins, whose conviction of manslaughter by criminal operation was mentioned last week, has been sentenced to 10 years in the penitentiary, the maximum penalty. His lawyers have appealed the case.

Offer of Hospital Site Refused.—A recent offer of a piece of ground of 40 to 50 acres with a large three-story house on it, large enough for 50 beds, to be used for a children's country hospital, has been declined by the authorities of the Robert Garrett Children's Hospital, who have provision in this respect. It has, therefore, been offered to Washington, to which it is nearer than to Baltimore.

Dispensary Report.—The forty-ninth annual report of the Northeastern Dispensary shows that 9,588 persons attended during the year; 5,701 white, 3,887 colored. The appropriation of \$1,500 by the state and the contract with the city have put the institution in a good financial footing, while the election of a board of lady managers has added much to its efficiency. Dr. Arthur Wegefath is president.

MASSACHUSETTS.

Boston's mortality rate has been exceptionally low for the last few weeks. During January there was a good deal of influenza, but the cases were generally of a mild type and not often preliminary to pneumonia, as in some epidemics. Early in February even this mild epidemic abated.

Memorial Infants' Hospital.—A gift of \$76,000 to establish an infants' hospital as an adjunct to the Harvard Medical School, is announced; \$60,000 more is promised, and the entire gift will be a memorial to Thomas Morgan Rotch, class of '01, Harvard. The site will be adjacent to the medical school, which will be built in the Longwood section of Boston.

The New Harvard Medical School.—Work will be commenced on the new buildings for Harvard Medical School, in the near future. They will occupy a 26-acre lot in the Back Bay Fens. Seven buildings will be erected; five for the medical school, one for the dental school and one for a power house. They will cost more than \$2,000,000, and are expected to be ready for occupancy in 1904.

Foot and Mouth Disease.—This disease has again gained a foothold in Massachusetts. A large district of the state has been strictly quarantined and most vigorous efforts are being made to stamp the disease out. Believing that stray cats and dogs are carrying the disease, all such visiting by these animals within that district is forbidden. Pigeons are also suspected by Dr. Salmon of being carriers of the virus, but inasmuch as the virus is submicroscopic it is difficult to prove these suspicions. Few, if any, cases of the disease in children have occurred in the state, which fact accords with the general experience that the disease is only rarely transmitted from animals to men.

Meetings Successful.—The meetings held at the Boston Medical Library this winter have been a great success. In place of the usual dozen or twenty men, the physicians of Boston and vicinity have assembled by the hundred. Dr. William T. Councilman has presided, and the committee have provided a series of excellent papers. At the last meeting, February 23, Dr. Townsend demonstrated that his method for pouring off the upper quarter of a quart of milk which has stood 8 hours yields cream of a uniform percentage of about 10 per cent. fat. Papers were also read on "An Analysis of 117 Specimens of Mother's Milk," "Foot and Mouth Disease," and a lantern slide lecture was given on "Congenital Hip Disease," by Dr. Bradford. The so-called bloodless method was fully explained, and its limitations pointed out. A photograph was shown of a child treated successfully by this method by Dr. Dam at the Boston Children's Hospital several years ago.

MICHIGAN.

Medical Law Sustained.—The United States Supreme Court has sustained the validity of the Michigan law regulating the practice of medicine, affirming the decision of the Supreme Court of Michigan in the case of August G. Reetze, who attacked the validity of the law.

January Mortality.—There were 2,856 deaths reported during January, corresponding to a death rate of 13.5 per 1,000 population per annum. This is 190 more than that registered for the preceding month, and 32 more than the number registered for January, 1902. There were 550 deaths of infants under 1 year, and 906 deaths of persons aged over 65. Tuberculosis caused 195 deaths; typhoid fever, 48; diphtheria, 58; scarlet fever, 36; measles, 13; whooping cough, 40; pneumonia, 382; influenza, 39; cancer, 140; accidents and violence, 126, and smallpox, 7.

Mortality for 1902.—The total number of deaths registered in the state during 1902 was 30,962, corresponding to a death rate of 12.6 per 1,000. For the year 1901 the number of deaths registered was 33,848, and the death rate was 14.0. There were 2,886 fewer deaths registered for 1902 than for the preceding year. At certain important ages, deaths were proportioned as follows: Infants under 1 year of age, 5,754, or 18.6 per cent.; children aged 1 to 4 years, both inclusive, 2,214, or 7.2 per cent., and persons over 65 years, 9,081, or 29.3 per cent. These ratios were substantially the same as for the preceding year. The total number of deaths from certain important causes during the year 1902 was as follows: Tuberculosis of lungs, 2,030, a decrease of 58 from 1901; other forms of tuberculosis, 323, a decrease of 10; typhoid fever, 592, a decrease of 43; diphtheria, 500, an increase of 2; scarlet fever, 261, a decrease of 25; measles, 229, an increase of 156; whooping cough, 290, an increase of 136; pneumonia, 2,907, a decrease of 56; diarrhea and enteritis, under 2 years, 1,350, a decrease of

320; meningitis of all forms, except traumatic and tuberculous, 496, a decrease of 37; influenza, 373, a decrease of 881; puerperal septicemia, 168, a decrease of 15; cancer, 1,441, a decrease of 2, which may be rather remarkable as perhaps marking a turning point in what has heretofore been a progressive increase of this disease; accidents and violence, 1,951, a decrease of 87.

NEW YORK.

Sale of Adulterated Milk.—The senate has passed a bill providing that the sale of each can of adulterated milk shall constitute a distinct violation of the law.

State Medical Inspector.—A bill has been introduced into the senate providing for the appointment of a state medical inspector at a salary of \$5,000 a year, to be appointed by the State Commission in Lunacy, and whose duty it shall be to examine patients and hospitals for the insane.

Typhoid at Ithaca.—During the past week there have been 15 or 20 new cases daily, and the total number of deaths among the students at Cornell has reached 17. Many of the new cases seem to be the result of secondary infection. The local board of health adopted a resolution making it a misdemeanor for any one to drink, or serve to others, unboiled water supplied from the local water company's system.

Personal.—Dr. George K. Meynen, Jamaica, has been appointed chief surgeon of the Long Island Railroad, vice Dr. J. Frank Valentine, deceased.—Dr. Julius F. Wingenbach, Utica, has been made surgeon of the Twenty-eighth Separate Company, N. G., N. Y., vice Dr. William A. Burgess, removed to Cheyenne, Wyo.—Dr. Albert H. Brundage, Brooklyn, has been elected president of the New York State Board of Pharmacy.

Registration of Nurses.—According to a bill introduced by the New York State Nurses' Association, no one is to be styled or known as a registered nurse, or use the abbreviation "R.N." who does not hold a diploma from a training school for nurses connected with a hospital giving a course of at least two years, and who is not registered by the regents of the University of the State of New York. The regents are to appoint, annually, a board of five examiners.

Pure Drug Bill.—A bill, having some peculiar provisions, has been introduced into the legislature by Assemblyman Bostwick, and it has already developed a strong opposition. It is aimed at patent medicine companies, but other drug dealers suffer as well. It compels the labeling of all medicines and drugs, showing what their ingredients are and proof of purity. The label must also state at what time the drug deteriorates and the date when it was put up. Mr. Bostwick now admits that the bill is not as good as he at first thought, but insists that the provision that no druggist shall substitute one drug for another without the knowledge and consent of the buyer should be enacted into law.

New York City.

Lebanon Hospital.—The tenth anniversary of Lebanon Hospital, in the Borough of the Bronx, was celebrated with appropriate ceremonies, February 22.

Columbus Hospital Extension.—This hospital has purchased, in the rear of the present building, three three-story dwellings, which are to be converted into an extension for the institution.

Bellevue Hospital.—The much-needed building for Bellevue Hospital is not long to be delayed, for the first appropriation of \$75,000 for the preliminary work has been made, and it is stated that the cost of the new hospital will reach \$3,000,000. A new building is also to be built for Fordham Hospital at a cost of \$500,000.

Child Labor.—There has been so much evasion of the present laws regarding child labor that a bill has been introduced into the legislature, which prohibits the employment of children under 16 years old in certain dangerous occupations, requires children between the ages of 12 and 14 to attend school throughout the school year, and makes it necessary to produce the certificate of birth, instead of the parents' affidavit of age, before a certificate of employment can be granted to children under the age of 16.

Personal.—Dr. S. Oakley Vanderpoel, medical director of the New York Life Insurance Company, is taking a trip to the Orient, via San Francisco.—Dr. John A. McCorkle, Brooklyn, has been elected president of the Long Island College Hospital. In honor of Dr. McCorkle, nearly a hundred of his colleagues gave him a dinner, February 14.—The reappointment of Dr. A. H. Doty as health officer of the port of New

York has been confirmed by the senate.—Dr. Farquhar Ferguson has been transferred from visiting to consulting physician of the Columbus Hospital; Dr. Frederick C. Keller has been appointed attending physician, and Dr. Henry Hazen, attending physician in diseases of children.

PENNSYLVANIA.

Action Against Smallpox.—To stamp out the smallpox epidemic in Bristol, Pa., the mill owners have contributed \$5,000 to be used by the board of health. A special hospital is to be erected, and a house-to-house canvass is to be made by vaccine physicians.

A Legislative Visitation.—Members of the house of representatives committee on appropriations, to the number of a score or more, recently spent several days in Philadelphia on a tour of inspection to the institutions, including many hospitals, which have applied for state aid.

Makes Plea for Poor Consumptives.—Dr. Lawrence F. Flick, Philadelphia, was given a hearing by the house of representatives in his advocacy of an appropriation of \$300,000 to the Free Hospital for Poor Consumptives. Of such an appropriation, \$200,000 would be used to extend the White Haven Sanitarium by an addition of 200 beds; \$50,000 for intermediate places to treat patients not well enough to go to White Haven, and \$50,000 for dispensaries in first and second-class cities for the treatment of walking cases.

To Raise Standard of Preliminary Education.—A bill introduced into the legislature seeks to raise the standard of education preliminary to a medical course. The bill requires from candidates for license to practice medicine a diploma of graduation from a reputable college or university, or a diploma of graduation after a four years' course at a state normal, a high school or academy, or a certificate of having passed the examinations for admission to the freshman class of a reputable literary or scientific college or university. The bill provides that, after Jan. 1, 1907, applicants for license must furnish proof that they have pursued the study of medicine for four years, for at least eight months in each year, in four different calendar years, in some legally incorporated reputable medical college.

Philadelphia.

The Children's Hospital.—This institution, a new structure forming a part of the Philadelphia Hospital, has been completed for a few months, but has very recently been equipped and occupied by some 60 inmates from different departments of the institution. Room is provided for 50 more patients.

Personal.—Dr. James Tyson, professor of the theory and practice of medicine in the medical college of the University of Pennsylvania, has been appointed a visiting physician to the Pennsylvania Hospital, the place made vacant by the death of Dr. Frederick A. Packard. Dr. Tyson resigned as visiting physician to the Philadelphia Hospital, and the place has been filled by the appointment of his son, Dr. T. Mellor Tyson.

"Med-Chi" Troubles.—Contractors refuse to make proposals for the repair of Medico-Chirurgical Hospital, recently damaged by a boiler explosion, asserting that, owing to the peculiar nature of the damage, no reliable estimate can be made. The work of repairing will likely be done by the day. Some liberal contributions towards the expense of repairing have been made, but donations are far short of the necessary amount. The Baldwin Locomotive Works Company has donated \$5,000 for the maintenance of a free bed.

Deaths and Disease.—For the week ended February 28 there were 12 more new cases of smallpox, 7 of typhoid fever, 1 of diphtheria, and 15 of scarlet fever than for the previous week. From all causes there were 639 deaths, an increase of 57 over the previous week, 47 more than for the corresponding week of last year, and 101 more than for the corresponding week of 1901. Besides the prevalence of the contagious diseases mentioned, affections of the respiratory tract, influenza, bronchitis and pneumonia claim many victims.

The Carnegie Gift Secured.—Andrew Carnegie's gift of \$50,000 towards a commodious library for the College of Physicians is assured, as the additional \$50,000 which it was stipulated should be raised by the college before his gift was available, has virtually been pledged. An important question to be determined by the college now arises, namely: Whether to increase the height of the present structure or to purchase a new site and erect thereon an entire new building? The latter plan, favored by many of the fellows, would necessitate the raising of a large additional sum.

GENERAL.

X-Rays for Hodgkin's Disease.—A case of lymphadenoma treated by x-rays with marked improvement at the University of Colorado Hospital at Boulder suggests the value of further investigations along this line.

Actors' Tuberculosis Sanatorium.—It is said by one of their number that 50 per cent. or more of actors die of tuberculosis. A project is under way to establish in Colorado or New Mexico a sanatorium where actors affected with this disease may find a home and treatment.

Address on Ophthalmology at New Orleans.—Dr. W. Uthoff, professor of ophthalmology in the University of Breslau, and one of the best known authorities on the pathology and bacteriology of the eye, will give an address before the Section on Ophthalmology of the American Medical Association at New Orleans in May.

Whiting Caught.—Word has been received that Whiting, who has been representing himself to be an agent of THE JOURNAL and the American Medical Association, has been apprehended and is held by the police authorities of Jamestown, N. Y. Physicians in that state who have been defrauded by this individual should at once enter complaints with the chief of police of Jamestown, and physicians in Pennsylvania should communicate with the chief of police of Reading.

The Samuel D. Gross Prize.—The Philadelphia Academy of Surgery announces that this prize of \$1,200 will be awarded Jan. 1, 1905, to the writer of the best original essay, illustrative of some subject in surgical pathology or surgical practice, founded on original investigations, the candidates for the prize to be American citizens. The essays should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 219 South Thirteenth street, Philadelphia," of whom further particulars may be had.

New Board of Medical Examiners in Hawaii.—Some time ago a board was appointed by the acting treasurer, and later this appointment was called illegal. As mentioned at that time in THE JOURNAL, the physicians whose licenses were thereby invalidated began suit to prevent their re-examination being required. This suit was never brought to trial, and the question arose as to where the appointing power rested. As the result of a recent conference it was decided that the governor should appoint this board of examiners, which he has accordingly done. A number of physicians are waiting examination.

CANADA.

McGill's President Honored.—Dr. William Peterson, president of McGill University, Montreal, had conferred on him the degree of doctor of laws, at Philadelphia, February 21, by the University of Pennsylvania, the occasion being the celebration of Washington's birthday.

An anti-cigarette deputation recently waited on Premier Laurier at Ottawa and presented a largely signed petition praying for the absolute prohibition of the manufacture, importation and sale of cigarettes. The premier has promised consideration on behalf of himself and colleagues.

Manitoba's Health for 1902.—There was no fatal form or epidemic of infectious or contagious diseases in Manitoba in 1902, although there were a number of cases of smallpox in the early part of the year. There were many cases of typhoid fever and the usual number of cases of diphtheria.

British Columbia Quarantining Against the State of Washington.—Owing to laxity of quarantine regulations at Blaine, Wash., where many cases of smallpox exist, the British Columbia authorities have increased the number of special officers assisting Dr. Kendall in preventing any one coming across the line into the province.

Cost of Maintenance in Toronto Hospitals.—The total cost of maintenance in the leading five hospitals of Toronto last year was as follows: General, \$85,841.34; Western, \$15,504.71; St. Michael's, \$39,224.19; Grace, \$23,021.14; Sick Children's, \$35,000. The cost per patient per day was: General, \$0.935; Western, \$0.625; St. Michael's, \$0.60; Grace, \$0.77; Sick Children's, \$0.88.

New Maternity Ward for Victoria, B. C., Hospital.—An early start will be made in the erection of a new maternity ward to the Provincial Royal Jubilee Hospital. Lord Strathcona has written the hospital authorities consenting that his donation of \$5,000 to the hospital may take that disposition. The total number of patients admitted to the wards during January was 78, and the number treated, 137.

FOREIGN.

Puericulture at a Young Ladies' Seminary.—Professor Pinard is giving a course of lectures on the care of babies before a young ladies' seminary at Paris.

Association of Directors of Sanatoria.—The third annual assembly of the directors of sanatoria in Germany is being held in Berlin this week. One of the principal subjects under discussion is the organization of a training school for attendants which the University Institute of Hydrotherapy has agreed to establish.

Retirement of Hitzig.—Dr. E. Hitzig, director of the clinic for nervous diseases and the polyclinic at Halle, has resigned his professional duties on account of a progressive eye affection. When he organized the clinic for psychiatry and nervous diseases in 1885, it was the first institution of the kind connected with any Prussian university. His name is, perhaps, best known by his studies on cerebral localizations.

Tuberculosis in Germany.—The following facts are gathered by the German department of health:

Out of 1,000 deaths in Germany of persons between the ages of fifteen and sixty, 316 are from tuberculosis. Persons under fifteen and over sixty are seldom affected. The mortality of the whole population has averaged 242 per 100,000 yearly, rising in the Bavarian Palatinate to 329, in Bremen to 337, and in Hesse to 314. The conditions in Germany are shown to be better than in France, Austria, and Russia, but worse than in Switzerland, Belgium, Denmark, Norway, and, especially, England.

Consumption can best be treated in special hospitals, in which Germany now has accommodation for 30,000 patients.

A Spartan School in Switzerland.—The *Journal de Med. de Paris* describes a boys' boarding school in successful operation at Sekingen in Switzerland, near Basle. The boys are brought up in the strictest simplicity and as close to nature as possible. Unusual facilities for bathing are provided, but the water is never warmed. The lads wear sleeveless shirts, sandals instead of shoes, and no caps. The handkerchief is fastened to the belt, as no pockets are allowed. The school has developed many strong boys out of puny ones, and Professor Ringele, the director, is now establishing a school for girls on the same principles.

Charlatans in Berlin and Its Province.—The Berlin Medical Chamber has been collecting information in regard to charlatans, and finds that there are 600 in Berlin alone and 383 in the province. The police have knowledge of 185 cases in which injury has resulted from their practices, proving fatal in 24. Extraordinarily excessive money demands were known in 10. In some of the cases the damage done reacted to the pecuniary disadvantage of sick benefit or life insurance companies. The department of public works has recently ordered the railroad officials to warn the employes explicitly against the dangers of resorting to nature healers.

Silver Jubilee of Prof. E. Bezold of Munich.—A souvenir number of the *Zeitschrift für Ohren-Heilkunde* was presented to Bezold on the twenty-fifth anniversary of his professional career by his pupils and assistants, some of whom had traveled from distant lands to bring their congratulations. The festivities included a speech by six deaf mutes from the Deaf and Dumb Asylum, whose utterance was surprisingly good. They thanked him for his achievements on behalf of the deaf and dumb. The *Muench. Med. Woch.* of February 10 brings an excellent portrait of Bezold, the one hundred and fortieth in its "Gallery of Prominent Medical Men."

Wireless Telegraphy the Invention of a Physician.—The first private wireless message sent across the English channel was from Marconi and was addressed to Dr. E. Branly of Paris. It was a message of congratulation on the success of wireless telegraphy, "due in part," it stated, "to the remarkable labors of Dr. Branly." As long ago as 1890 he reported experiments before the Académie des Sciences which established the practicability of telegraphing without wire communication, and the Comptes Rendus of the Académie and of journals devoted to physics contain many reports by him. He is professor of physics at Paris and the last *Gazette Med. de Paris* contains his portrait and an interview on the subject of his discoveries, which contained the germ of wireless telegraphy and the opening and closing of an electric circuit at a distance.

Struggle to Maintain Ethical Principles.—In Witten, another German city, a conflict between the physicians and the sick benefit society is impending like the one now in progress at Gera. Our readers will remember that the physicians connected with a certain *Krankenkasse* refused to serve longer when a "nature healer" was added to the medical staff on the same terms as the rest. The *Kasse* has been unable, to date, to

find any physicians willing to take their place, although it is advertising for them in the Berlin papers, etc. The Leipsic Verband, or "Union for Protection of the Economic Interests of the Profession," is sustaining the Gera physicians, both morally and materially. They have officially announced that they will aid the *Kassen* members in any emergency, give first aid, etc., but decline further attendance until the "nature healer" is dismissed.

The New Moscow Cancer Hospital.—Professor Lewschin of Moscow has succeeded in organizing a cancer hospital, which is said to be a model in every respect. Contributions of more than \$175,000 were collected for the purpose, and the university has taken the new institution under its charge. The word cancer is omitted from its name, and it is known as the "Tumor Clinic and Asylum." Four large laboratories for special research are installed in it, and the operating rooms are lighted by seven large windows and glass roof. All the inner corners and angles are rounded, and the floors slope slightly to the drains. At all the wash rooms there are special cranes and handles, so that the vessels can be washed without touching them with the hands. Lewschin has written a circular of questions concerning cancer patients, which the authorities have sent to 15,000 physicians in Russia, and 5,000 replies have already been received. A recent letter to the *Deutsche Med. Woch.*, in addition to the above items, mentions that the number of deaths from cancer at Moscow has risen from 411 in 1880 to 832 in 1896.

Fourteenth International Medical Congress.—Particulars in regard to the numerous excursions in Spain, open to the members of the congress, have been received at this office. A reduction of 50 to 30 per cent. is allowed on presentation of the coupon membership ticket to be given each member. The transportation is in the hands of the transportation company, the "Voyages pratiques," 9 rue de Rome, Paris, which will furnish further particulars and circulars on demand. Special trains for the members will leave Irun and Port Bou for Madrid on certain dates. The congress will convene April 23 to 30. The committee in charge of lodgings announces that there are a large number of hotels at Madrid whose table and comfort vie with those of the larger European cities, and many of the best private families have volunteered to open their homes to the members, so that thousands of lodgings are provided for, at rates ranging from 13 to 50 pesetas a day, that is, about \$2.60 to \$10. The committee urges the necessity, however, of early application for lodgings to secure first choice. Mr. Ulrich Frei has charge of the matter, and should be directly addressed. The king and queen regent are to offer the members a garden party and a general reception at the palace. The municipality has organized a special fête with, probably, a gala performance at the Theatre Royal. There will also be a special bull fight for those who wish to visit this national institution. In addition to these general affairs, the sections expect to organize special excursions, etc., for their members. Mail should be addressed to the members, with the name, followed by "Membre du xiv Congrès International de Médecine, Section de ——" (concluding with the name of the country in which the member resides). Membership fees (25 francs, or \$5 in a draft on Paris) may be sent directly to the secretary general, Dr. A. F. Caro, Faculté de Médecine, Madrid, or, until March 20, to the national committees. The secretary of the American committee is Dr. Huddleston, 126 West Eighty-fifth street, New York. Great interest is being manifested in the approaching congress in medical circles in Europe, and it will undoubtedly be a noteworthy gathering of prominent men. It seems probable that the congress will have presented to it the results of much research on serum therapy in various diseases. The complete program may be had of Dr. Huddleston.

LONDON LETTER.

Lathyrism in Central India.

Lathyrism is prevalent in the central provinces of India. Major Buchanan, of the Indian Medical Service, and Mr. Stockman, professor of pathology in the Edinburgh Veterinary School, have been appointed to inquire into its cause and prevention. It is thought to result from the consumption in large quantities of the food grain known as *Lathyrus sativus*, or teora, when not prepared in such a way as to eliminate a poisonous principle. The clinical features are as follows: For two or three months before the onset the patient has been living almost exclusively on teora, which has been made into cakes and cooked, but not boiled. Then, for a few days, he feels weak and drowsy, with pains in the legs and occasional cramps in the calves. Suddenly, while at work, he falls and finds he

is unable to rise. After this he is confined to bed for a month or two, and stops eating teora. The arms are not affected, and there is no loss of sensation, but the lower extremities are paralyzed and, in severe cases, there is loss of control over the sphincters and loss of sexual power. The condition of the leg muscles is one of marked spasticity; the knee jerks are exaggerated, ankle clonus is obtained and, when the patient stands for a few minutes without the aid of sticks, clonic spasms occur in the legs. There is also rigidity of the muscles of the spine, so that when sitting down the patient is unable to turn the upper part of his body around. Improvement is slow, but gradual, whether treatment is adopted or not. There is no fever and little or no muscular atrophy.

Food Poisoning and Epidemic Diarrhea.

At the Epidemiological Society, Prof. Sheridan Delepine read an important paper on the "Bearing of Outbreaks of Food Poisoning on the Etiology of Epidemic Diarrhea." He defined epidemic diarrhea as an infectious disease affecting many persons at the same time, especially during the hot season and in populous districts, where it causes a high infant mortality. Its bacteriology is far from being settled. Most observers believe that the *Bacillus coli communis* is the most important factor, but a spirillum, the *Bacillus enteritidis sporogenes*, various streptococci and *Bacillus lactis aerogenes* have been incriminated by others. Professor Delepine described various outbreaks, which he had examined, especially those of milk diarrhea at Manchester in 1894 and of pork pie and sausage poisoning at Derby in 1902 (recently described in THE JOURNAL). The general conclusions at which he has arrived are that epidemic diarrhea is caused by bacteria of the *Bacillus coli* group, the least virulent being those that most resembled the *Bacillus coli communis* and the most virulent being those that most closely approximate to the *Bacillus enteritidis*, especially the *Bacillus enteritidis* of Gärtner. The most dangerous are, consequently, those that acidify or coagulate milk or impart an offensive odor to it. The obvious precautions to be observed are cleanliness, consumption as early as possible, refrigeration to 4 C., or sterilization by heat.

The Serum Treatment of Poisoning by Snake Venom.

Two very important papers on this subject have been read at the Glasgow Medico-Chirurgical Society. Dr. George Lamb of the Indian Medical Service, who has minutely investigated the subject of snake bites, pointed out that the poisonous snakes of India might be divided into two groups—colubrine and viperine. An example of the former is the cobra, of the latter, the *Daboia russellii*, or chain viper. The poisonous principles of all snakes' venoms are albuminous substances, which vary in different species. Thus cobra venom contains no poisonous principle which is contained in daboia venom and vice versa. Hence the symptoms of poisoning by these venoms are very different. When a man is bitten by a cobra severe pain and swelling around the wound occur, after an hour or two nausea and lethargy begin, paralysis soon follows, and death usually takes place about six hours later from failure of respiration. On the other hand, daboia venom causes a large bloody extravasation around the wound, because it has destructive action on the capillaries and red corpuscles, and depresses the action of the heart, sometimes to a fatal extent. Hemorrhage may occur from all the orifices of the body. Paralysis is never produced, and recovery often takes place. Dr. Calmette of Lille, by immunizing horses with a mixture of snake venoms, of which cobra venom is the principal ingredient, has produced an antivenomous serum which is reliable in cases of cobra bite. But Dr. Lamb has found that it is useless in poisoning by daboia venom, and Martin of Melbourne has shown its inability to neutralize the venom of Australian snakes. In the treatment of cobra poisoning the object is to get the serum as quickly as possible into contact with the venom, which is effected by intravenous injection. If this can not be performed the serum may be injected subcutaneously. At least 40 c.c. should be injected. If after injection symptoms occur the dose should be repeated. The only other treatment of any use is tying a ligature about the bite. At present there is no serum for daboia poisoning. Cases can be treated only on general principles; diffusible stimulants help to tide over the stage of cardiac depression.

Dr. Walter K. Hunter then read a paper on the histological appearances of the nervous system in krait and cobra poisoning. His investigations were made on animals killed by Dr. Lamb in the course of his experiments on snake poisoning. In monkeys killed with krait and with cobra venom he found acute degenerative changes in the ganglion cells of the cord, medulla, and

pons, and in the peripheral nerves. In one monkey killed with cobra poison degeneration of nearly every nerve in the central nervous system was produced. In the cervical enlargement of the cord the outlines of the Nissl granules of the antero- and postero-lateral groups were blurred as if they had been acted on by some solvent. The rest of the cells of the anterior were degenerated, and without any granules whatever. In the lumbosacral enlargement these changes were still more marked. In the cerebral cortex there was acute chromatolysis of the majority of the pyramidal cells.

The Professor of Anatomy in the University of Edinburgh.

Sir Wm. Turner having been promoted to the principalship of the University of Edinburgh, the chair of anatomy became vacant. The curators of patronage have appointed Dr. D. J. Cunningham, F.R.S., professor of anatomy in the University of Dublin, to the position. He is pre-eminently qualified, having been eminent in that branch for many years.

PARIS LETTER.

Honors Paid to Professor Brouardel.

Professor Brouardel, who was replaced last year by Professor Debove as dean of the faculty, was recently made a grand officer of the Legion of Honor, and on this occasion a fitting tribute was paid to Brouardel's work as professor of legal medicine. The ceremony took place in the large amphitheater of the Faculty of Medicine, and the minister of public instruction, Chaumié, was present, as well as Liard, the vice-rector of the academy, and other high dignitaries of the university. Professor Gilbert, a pupil of Brouardel, made a speech, in which he showed how Professor Brouardel had always sacrificed his private interests for the general welfare, giving up his laboratory work, his practice and his hours of rest or recreation when his professional duties required his doing so. Dr. Marey, a member of the institute, who is so well known for his work on physiology, had written a speech which was read by Chauveau, as he was ill at the time. Dr. Debove also made a speech in which he made the remark that he trusted his successors would leave the deanship with as much affection and sympathy shown by their pupils and colleagues, which reminds one that Dr. Debove has not been in great favor with the students of the Paris Faculty. The minister, Chaumié, spoke of Brouardel's recent efforts in the campaign against tuberculosis.

Terrier's Statistics in Appendicitis.

Almost all the important surgeons in Paris are publishing their statistics on appendicitis at the weekly meetings of the Society of Surgery. Professor Terrier has been one of the last to do this. His statistics include three years' work at La Pitié, 1900-1901-1902. He divides operations into three categories: urgency operations, operations "*à chaud*," operations "*à froid*." Thirty-nine urgency operations furnished four deaths, or 10.25 per cent. mortality. The second type of operation was performed 17 times with one death, or 5.88 per cent. mortality. Of the last variety there were 61, with one death, or 1.80 per cent. The grand total is 117 operations with 6 deaths, or 5.12 per cent. mortality.

Cure of Gin Liver by the Internal Use of a Hog's Liver.

At a recent meeting of the Medical Society of the Hospitals, Dr. Galliard reported the case of a woman, 54 years old, who was suffering from cirrhosis of the liver. Various drugs were tried without effect, and, at last, she was given daily 150 grams of the liver of a pig. The urine soon became clearer and more abundant, the symptoms improved, and now she seems to be quite cured.

Faure's Second Operation for Cancer of the Esophagus.

Dr. Faure, surgeon at the Hotel Dieu, had already operated last December, on a case of cancer of the thoracic portion of the esophagus, and the patient died the next day. In a second case, which was operated on recently, Dr. Faure did not excise the first rib as before, but was able to remove a part of the esophagus eight centimeters long. The operation was done in both cases on the right side, though Drs. Quenu and Hartmann consider it best to operate from the left side on account of the pleural sinus. The latter was not, however, in the way, whereas on the left side the aorta might render the operation more difficult.

Hydrocele Containing Tuberculous Bacilli.

At a recent meeting of the Society of Surgery, Dr. Tuffier presented two patients who had been treated for simple hydro-

cele and who showed no trace of genital tuberculosis. The effusion had been treated by Jousset's method of centrifuging and had been found to contain tuberculous bacilli, which would tend to show that in a certain number of cases hydrocele was of tuberculous origin.

Infantile Scurvy.

At a recent meeting of the Obstetrical Society, Dr. de Rothschild reported the recent statistics of infantile scurvy, which show that this affection is exceedingly rare in France, there being only 23 cases reported. It is, however, frequently seen in Germany, Baginski coming across 8 or 10 cases yearly. The latter author has ever cited instances where the child was fed from the breast. Professor Budin, the great advocate of feeding with sterilized milk, said he had never seen a single case of the disease and, as he uses sterilized milk, he feels that it must have some other etiology. In connection with this it may be stated that at a recent meeting of one of the medical societies of Paris a certain variety of sterilized milk was spoken of as having been given to a child suffering from scurvy. It is a noteworthy fact that in the reports that appeared in the medical papers no mention was made of the name, the milk being spoken of as sterilized milk.

Correspondence.

The Diploma vs. Examination.

PEORIA, ILL., Feb. 23, 1903.

To the Editor:—Your remarks in your issue of February 21 under the caption "The Diploma vs. Examination" lead me to a desire to know your reasons for the position therein taken. The question involved is a particularly vital one at the present stage of legislative effort on the part of the profession of the state of Illinois, and a goodly number, including myself, entertain views diametrically opposed to those you have expressed. If the judgment of such is erroneous, I for one should like to have it corrected by efficient arguments. The action of a majority of our state or territorial legislatures is not alone conclusive, in that a particularly active coterie of medical men may, as we have had reason to know, secure legislation not representative of the sentiments of the profession as a whole.

I can not conceive of the likelihood of procuring, under existing political conditions in and out of the profession, a central examining board so constituted as to secure, in the time and with the opportunities ever at its disposal, a superiorly adequate knowledge of any individual's fitness for the practice of medicine. If the possession of a diploma is to be considered a prerequisite to examination, either as an excuse for laxity or a safeguard against omissions, it seems to me a confession of weakness of the whole cumbersome scheme of a central examining board and its associate committees. In my judgment it were far easier and more practicable, and more in harmony with the economic and centralizing spirit of the time, for a small number to authoritatively investigate and pass on the educational merits of fifty or one hundred institutions of learning, occasionally, than to adopt the task of perpetually investigating the qualifications of thousands of individuals. Instructors, or even some special individual appointed for the purpose, must, it seems to me, be acknowledged to be in a better position, through constant association with students and their course of work, to judge of their all-around fitness than can be any company of individuals armed with a mere series of stock questions entirely unassociated with any opportunity for their practical application.

O. B. WILL.

Ἀχιλλεύς ἀνέστη Χωόμενος.

Achilles Rose in His Wrath.

BROOKLYN, Feb. 25, 1903.

To the Editor:—In THE JOURNAL of February 14 there appeared a letter from one, Achilles Rose, M.D., who seems to have a grievance of some kind. Our attention has just been called to his amusing invective. The editors of the *Medical Library and Historical Journal* doubtless would have qualified as "men of learning" if only the journal had been published in modern Greek. This "monstrosity" might then have seemed

as sweet as "A Rose of Yesterday." Alas! we are not "men of learning," and we do not claim to be—we are only men who are learning. There is only one man of learning, only one—and he will not quote titles of books "because many of these titles are misspelled." We are desolate. We once knew of a woman who never married because some men are bad. All mankind grieved.

The writer acknowledges the justness of the criticism of Achilles Rose, M.D., as to there being some misspelled titles in the 17-page list of "New Medical Publications" published in the initial number of the *Journal*. Typographical errors will creep in, and in this instance circumstances, unfortunately, prevented this list from receiving the careful revision the editors will be able to give it in the future. Then, if the eyes of "The Great Corrector" perchance ever again should see this "monstrosity" perhaps his grief will be somewhat assuaged.

We like just criticism and take it kindly. We solicit it. Criticism is the index finger pointing to progress. Thank God, we have not the slightest idea that we have reached a state of perfection.

The Medical Library and Historical Journal,
ALBERT T. HUNTINGTON, Editor.

Registrations at the Madrid Congress.

The following circular letter is self-explanatory:

CINCINNATI, Feb. 24, 1903.

Dear Doctor:—Some time last year I received a lot of application blanks from the secretary of the International Medical Congress of Madrid, and, in turn, forwarded them to the members of the A. A. O. G., requesting such as desired to fill out the same and return them, with the admission fee of \$6. I received in return a number of applications, with checks, etc., and forwarded them to Madrid, with the request that the registration tickets be forwarded direct to the subscribers. I heard nothing more of the matter, and entirely overlooked the fact that I failed to receive my own admission ticket, until I received, to-day, advice as follows:

Your very gracious letter, enclosing 126 pesetas, was duly received. I am, however, full of humiliation to advise you that the accompanying applications were mislaid. We have tried to find them, but, at the last moment, forced to abandon the effort. If you will be so kind as to again forward the names, the certificates will be made out at once.

I have no memorandum of those who subscribed, and write to ask whether or not you sent your subscription to me. If so, kindly advise me, and I will at once forward the information to Madrid.

Please let me hear from you by return mail.

Very sincerely yours,

CHAS. A. L. REED.

Anti-Infectious Action of Crede's Collargol.

To the Editor:—In your issue of December 20 I notice with much surprise and regret an editorial, "Anti-Infectious Action of Crede's Collargol," in which the statement is made that, because the bacteriologic investigations of Cohn in Pfeiffer's laboratory (Königsberg) have given negative results, and because 45 minutes after introduction into the circulation colloidal silver is no longer demonstrable in the blood, its fate as a specific against sepsis is settled.

It seems that you expect from collargolum a powerful bactericide effect, as from sublimate or nitrate of silver; if it possessed an action of this character, it could never be introduced so freely into the system. As, however, Professor Wenekebach (director of the Groningen University Medical Clinic) states, collargolum is a powerful catalysator in the body, and hence can only enhance the normal bactericide properties of the blood.

Bacteriologic experiments are incompetent to determine the efficacy or inefficacy of collargolum, since its action is only developed in the body, and in the presence of pathogenic bacteria or their toxins, with which it forms combinations, while in sterile blood or lymph it remains metallic silver.

I am sorry that in this editorial you have brushed aside the clinical testimony of such men as Professors Roswell Park, A. Jacoby, S. Marx, Chas. G. Cumston, H. J. Boldt, Dieckerhoff, Tillmanns, Walter B. Dorsett, George M. Coon, Forchheimer, Drs. Gustav Schirmer, Oscar Werler, and many others, whose reports you will find in our pamphlets of March, 1899; March, 1900; October, 1900; March, 1901; October, 1901; March, 1902, and October, 1902, which we send you by this mail, separately. I do not remember having ever seen a single clinical report "denying all claims of efficacy" for collargolum; if such have been published their number is utterly insignificant to that of the favorable ones. Your very truly,

C. F. STEIFEL.

A Sample Health Board Propaganda.

DETROIT, MICH., Feb. 28, 1903.

To the Editor:—I accepted the appointment as a member of the Detroit Board of Health from Governor Pingree, Feb. 21, 1899, for the term ending Feb. 28, 1903.

On March 15, 1899, certain thoughts of mine appeared in the *Detroit Evening News* concerning the workings of the Detroit Health Department, and the kind of man needed as health officer. These thoughts later became my convictions, and were contained in my fixed policy, and were, viz.:

(a) Health officer to be a clinical physician with executive ability, and to have had personal experience diagnosing contagious diseases, including smallpox, scarlet fever and diphtheria.

(b) Health officer to examine *personally* suspicious or doubtful cases reported to the department, and meet *personally* private physicians asking consultation thereon.

(c) Health office to be operated on practical business principles, and without political coloring.

(d) Methods of health office to be up-to-date, but for every dollar of cost of maintenance the department to obtain full value in practical results—all unnecessary expense to be eliminated.

(e) All health department work of a medical nature to be performed by the salaried physician employees of the city.

(f) Health officer and all employees to give their entire time to the department. Under no circumstances should persons on regular salary be paid extra compensation.

Spencer says: "Political life is healthy only in proportion as it is conscientious." I have endeavored faithfully to enforce the above policy, as well as all health laws and ordinances applicable to Detroit, with what success the official records of the Detroit Board of Health will show.

JOHN L. IRWIN, M.D.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

MEDICAL PRACTICE QUERIES.

GRAND RAPIDS, MICH., Feb. 27, 1903.

To the Editor:—I am a graduate of a recognized medical college and am registered in Michigan. I wish to move to California. I understand that there is reciprocity between Illinois and California and between Michigan and Illinois. Is this true? Now, would it be allowable for me to register in Illinois and from there register in California? If not, what will I have to do to practice in California? Kindly answer in your "Queries." J. S. RANDALL.

ANS.—Illinois reciprocates on certain conditions with Michigan, but not with California yet. An examination will probably be required in California.

JOHNSON CREEK, WIS., March 2, 1903.

To the Editor:—Kindly let me know through the Queries and Minor Notes department of THE JOURNAL which state boards of medical examiners reciprocate and on what basis? MICH.

ANS.—Delaware reciprocates with New Jersey and Maryland; Illinois with Indiana, Maine, Michigan, New Jersey and Wisconsin; Indiana with Michigan, Wisconsin and Illinois; New Jersey with Delaware, Maine and Illinois; Maine with Illinois and New Jersey.

Some states accept certificates of certain others—thus Pennsylvania accepts those of New York, and Texas those of some twenty other states—Delaware, District of Columbia, Georgia, Iowa, Louisiana, Maryland, Mississippi, Missouri (if issued after July, 1901), Montana, Nevada, New Hampshire, New Jersey, New York, North Carolina, Oregon, Pennsylvania, South Carolina, Utah, Virginia, Washington.

Marriages.

JOHN J. ZAUM, M.D., to Miss Gertrude Anderton, both of Milwaukee, Wis., February 24.

ISAAC A. THOMPSON, M.D., to Miss Alma M. Despres, both of Traverse City, Mich., February 25.

JOSEPH A. GUERTIN, M.D., St. Mary, Ill., to Miss Amy Gros-saint of L'Erable, Ill., February 18.

JOHN G. MCKINNEY, M.D., Barry, Ill., to Mrs. Electa Henry of El Dara, Pike County, February 18.

JAMES W. BLAN, M.D., La Fayette, Ill., to Miss M. Mollie Goehring of Warsaw, Ill., February 18.

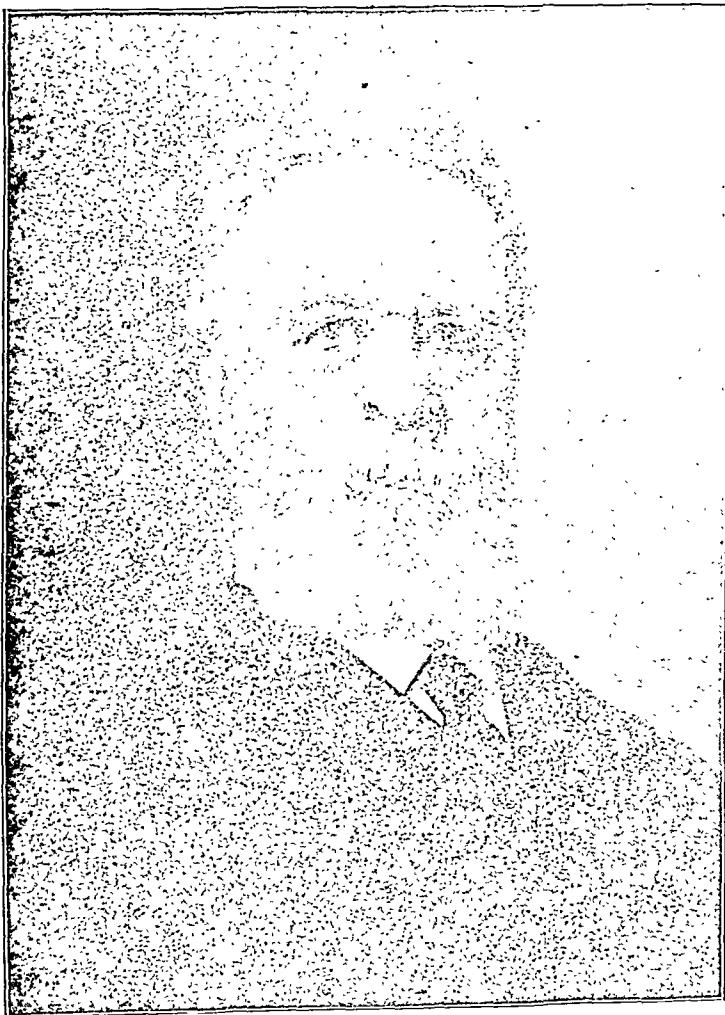
ROBERT STANLEY GOODMAN, M.D., Oakhill, Fluvanna County, Va., to Miss Mary Dixon Boggs, of Baltimore, February 17.

RICHARD M. FLETCHER, JR., M.D., acting assistant surgeon, U. S. A., to Miss Anna Ford Ludlow of Chicago, February 12.

Deaths.

T. Gaillard Thomas, M.D.

Theodore Gaillard Thomas, M.D., of New York City, died in Thomasville, Ga., February 28, aged 71. Dr. Thomas was one of the pioneers in American gynecology; as a teacher and



T. GAILLARD THOMAS, M.D.

clinician he was unsurpassed in his day; his courtesy and kindness of heart endeared him to the thousands of students whom he instructed, and to his brothers in the profession, and his sympathy and chivalrous tenderness endeared him to his patients.

Theodore Gaillard Thomas was born at Edisto Island, S. C., November 21, 1831. His early education was received in Charleston (S. C.) College, which he left in his senior year to enter the Medical College of the State of South Carolina, Charleston, from which he was graduated in 1852. He settled in New York City immediately after graduation and was resident physician at Bellevue Hospital, and New York City Hospital, Blackwell's Island. He soon devoted his attention especially to obstetrics and diseases of women. He was for many years professor of obstetrics and diseases of women and children

in the College of Physicians and Surgeons, New York; physician to Bellevue Hospital; surgeon to the Woman's Hospital in the State of New York; consulting surgeon to Nursery and Child's, French Lying-In, Skin and Cancer, Presbyterian, and St. Mary's hospitals. He was also at one time physician to Bellevue, St. Luke's, Roosevelt and the Strangers' hospitals.

He was a member of the American Medical Association; a founder, and in 1891, honorary fellow of the American Gynecological Society; a member and once president of the New York Obstetrical Society; a member of the New York State Medical Association, New York Academy of Medicine, New York County Medical Society, and New York Pathological Society; honorary fellow of the Obstetrical Society of London; corresponding fellow of the obstetrical societies of Berlin, Philadelphia and Louisville.

His work entitled "Diseases of Women" has been for many years a standard text-book.

His funeral was held in New York City, March 3, and was largely attended. Members of medical societies of which he was a member, hospital staffs on which he had served and the faculty of the College of Physicians and Surgeons were present in great numbers to pay the last honors to their deceased colleague.

W. E. B. Davis, M.D.—The later reports are still indefinite as to the manner in which Dr. Davis met his death. One account says that he got out of his buggy to go to his horse's head, when the animal reared, throwing him under the wheels of the train; another, that he lost his footing and fell under the train; another, that he did not take hold of the horse's bridle, but threw himself under the train; a fourth, that he was drawn under the moving train by the suction, and a fifth, that as he was about to seize his horse's bridle he was struck by the step of the coach and thrown under the train. The wheels of the rear truck passed over his body just above the hips, not breaking the skin. His right leg was broken and his face showed abrasions.

The body lay in state at his late residence for six hours on February 26, and hundreds took advantage of the opportunity to look on his face for the last time. The funeral ceremonies were marked by the simplicity which was characteristic of the deceased.

The *Age-Herald*, in an editorial mention of Dr. Davis' death, says: "He held not only a high place among the surgeons of this state, but he was widely known in other states. It may be said that he was esteemed by eminent surgeons throughout this country, and even in other countries. Here at home those to whom his skill and deep knowledge of the human frame had come are inconsolable, and in their homes the loss will be grievously felt. He was as tender-hearted as he was skilful, as genial and lovable as he was helpful and scientific. He was loved as a man and respected as a great surgeon. The loss of this people is heavy, and the grief of those to whom he was a companion and friend is beyond the power of words to express."

The newspaper also states: "The scenes at the infirmary were deeply pathetic. The white-capped nurses went quietly about their hospital duties, but in the atmosphere was the appalling hush of death. These good women would pass each other in the long, silent corridors, but their lips were mute. They passed in and out of the sick chambers and carried out to the minutest detail the instructions left by the physician whose end came so suddenly. Every white bed had its sufferer looking for relief to a life that had just gone out. They watched and waited the long afternoon and grew restless at the delay. And yet never a word of the tragedy came from the lips of the white-capped nurses, never a hint of the accident that was being discussed in the streets, at the clubs, in thousands of homes, in the most fashionable avenues and in the poorest districts of the city."

Franklin M. Kemp, M.D. Long Island College Hospital, Brooklyn, 1893, died from heart disease at Nueva Caceres, Philippine Islands, February 23. After his graduation Dr. Kemp served as assistant surgeon in the Soldiers' Home, Dayton, Ohio, and in 1896 was appointed first lieutenant and assistant surgeon in the Army. He served in Vancouver Barracks and Alaska, and in 1898 went to Manila, where he served under General Lawton, and twice was mentioned in despatches for bravery. He was invalided home in 1899, and was on duty at the United States Military Academy, West Point. He was made captain and assistant surgeon in 1901, and ordered back to the Philippines. He was a member of the Association of Military Surgeons of the United States.

Cochran McClelland, M.D. Jefferson Medical College, Philadelphia, 1873, formerly assistant to Prof. Ellerslie Wallace, a well-known gynecologist and obstetrician of Philadelphia, and a member of the American Medical Association, and the Philadelphia County Medical Society, died at his home in Philadelphia, February 16, from pneumonia, after an illness of two weeks, aged 58.

Caird Ryerson Maclean, M.D. Faculty of Medicine of Queen's University and Royal College of Physicians and Surgeons, Kingston, Ont., 1859; M.R.C.S. Eng., 1879, surgeon-lieutenant-colonel, a veteran of the Civil War, through which he served as surgeon, died at his home in Meaford, Ont., February 17, from paralysis, after a long illness, aged 65.

David Miller Anderson, M.D. Bellevue Hospital Medical College, New York, 1866, assistant surgeon in the Civil War, and three times a member of the Pennsylvania legislature, died at his home in Venetia, February 16, from pleuro-pneumonia, after an illness of two weeks, aged 65.

Robert Rose Dorsey, M.D. University of Pennsylvania, Philadelphia, 1882, fourth of his family in linear descent to practice medicine, died from consumption at his home in Los Angeles, Cal., February 18, from consumption, aged 43.

A. L. Cressler, M.D. Jefferson Medical College, Philadelphia, a member of the legislature in 1874, and a charter member of the Luzerne County Medical Society, died at his home in Wilkesbarre, Pa., February 23, aged 75.

Thomas Atkinson Council, M.D. College of Physicians and Surgeons, Baltimore, 1894, of Easton, Md., health officer of Talbot County, died at the City Hospital, Baltimore, from Bright's disease, February 18, aged 30.

James E. Ferguson, M.D. Philadelphia Medical College, 1852; Jefferson Medical College, Philadelphia, 1870, twice a member of the state legislature, died February 16, at his home in Bangor, Mich., aged 78.

Ingham Wood Donnan, M.D. Bellevue Hospital Medical College, New York, 1871, of South Side, Pittsburg, Pa., died from consumption at Aiken, S. C., February 13, after a long illness, aged 58.

Peter V. R. Daffoe, M.D. University of the Victoria College, Cobourg, Ont., 1864, of Tecumseh, Neb., died from consumption, February 17, near Macon, Mo., while returning home from Florida, aged 64.

Edward E. Baker, M.D. Medical School of Maine, Bowdoin College, Brunswick, 1887, of Friendship, Maine, died recently from consumption at Jefferson, Maine, after an illness of three years.

David A. Kappes, M.D. Jefferson Medical College, Philadelphia, 1884, a specialist on diseases of the eye, died from pneumonia at his home in Philadelphia, February 14.

John J. Conway, M.D. Long Island College Hospital, Brooklyn, 1880, died from pneumonia at his home in Brooklyn, after an illness of one week, February 13, aged 44.

Benjamin Bevan, M.D. New York University, 1890, died at his home in West Pittston, Pa., February 20, from myelitis, resulting from a fall, after a long illness, aged 41.

Martin B. Cherrie, M.D. Rush Medical College, Chicago, 1888, died at his home in Ankeny, Iowa, February 20, from consumption, after an illness of nearly four years.

Charles C. Conway, M.D. Washington University School of Medicine, Baltimore, 1869, died at his home in Orange County, Va., February 17, after a long illness, aged 70.

Alice H. Burdick, M.D. Eclectic Medical College of the City of New York, 1872, was struck by a train and instantly killed at Passaic, N. J., February 19, aged 60.

Carlos R. Allen, M.D. Dartmouth Medical College, Hanover, N. H., 1838, the oldest practitioner in Sussex County, Va., died at his home in Vernon, February 19, aged 88.

William J. Springfield, M.D. Cleveland College of Physicians and Surgeons, 1874, died recently from pneumonia at his home in Jolly, Daviess County, Ky.

Henry Addison Mandeville, M.D. College of Physicians and Surgeons, New York, 1891, died at his home in South Orange, N. J., January 31, aged 45.

D. Erastus Thomas, M.D. Medical College of Evansville, Ind., 1851, of Lacon, Ill., died at St. Petersburg, Fla., from heart disease, February 5, aged 78.

Pacificus B. Porter, M.D. Chicago Medical College, 1869, of Chicago, died suddenly in a drug store in Ravenswood, February 9, from heart disease, aged 57.

Elizabeth McFarland, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1901, died at Sharon, Pa., from broncho-pneumonia, February 7.

Henry Helfrich, M.D., a retired homeopathic physician of Allentown, Pa., died at his home in that city, February 1, from pneumonia, aged 99.

Benjamin R. Dostor, M.D. Jefferson Medical College, Philadelphia, 1858, died at his residence in Blakely, Ga., February 15, from Bright's disease.

William W. Wilkes, M.D. Louisville Medical College, 1871, died at his home in Waco, Texas, January 29, after an illness of several weeks, aged 56.

William Y. Howard, M.D. University of Louisville, Ky., 1888, died from hemorrhage of the stomach at his home in Louisville, February 2.

Hiram W. Alexander, M.D. University of Nashville (Tenn.), 1857, died at his home in Muir, Fayette County, Ky., February 24, aged 73.

Robert W. Norwood, M.D. University of Tennessee, Nashville, 1894, died at his home in West Nashville, Tenn., January 26, aged 43.

Jonas Watkins, M.D., an eclectic physician of Blanchester, Ohio, died at his home in that city, February 3, from apoplexy, aged 74.

John Tatman, M.D. Indiana Medical College, La Porte, Ind., 1840, died at his home in Mitchell, S.D., February 2, aged 85.

Bishop B. Sudworth, M.D. University of Michigan, Ann Arbor, 1883, died at his home in Ann Arbor, February 15, aged 73.

Herman S. Bissey, M.D. University of Pennsylvania, Philadelphia, 1880, died at his residence in Philadelphia, February 22.

Tousley B. Lewis, M.D. University of Buffalo, 1879, died at his residence in New York City, February 8.

Isaac Sanders, M.D., died at his home in Fordsville, Ky., January 29.

Book Notices.

THE WORK OF THE DIGESTIVE GLANDS. Lectures by Professor J. P. Pawlow. Director of the Institute for Experimental Medicine. English by W. H. Thompson, M.D., M.Ch., F.R.C.S. Professor of the Institute of Medicine, Trinity College, Dublin. Illustrated. Cloth. Pp. 196. Price, \$2.00. London: Charles Griffin & Co., Ltd. Philadelphia: J. B. Lippincott Co. 1902.

This is a translation of the lectures delivered by Professor Pawlow before a gathering of medical men in the St. Petersburg Institute for Experimental Medicine, before the Russian Medical Academy, etc. Since his audience was made up of men who were not supposed to know of the methods or results of his experimental work, he presented his facts in the simplest language, so that the least learned could understand; at least this is the opinion one would get from reading the English translation. It is barely possible that the translator should have credit for a part of this. In any event, even the ordinary intelligent layman will find the book intelligible, but, above all, easily readable and almost fascinating. The lectures give an account of Pawlow's great work in his physiologic laboratory connected with the St. Petersburg Institute for Experimental Medicine and of the splendid results achieved. We commend these lectures to every physician, whether he is interested in experimental medicine or not. It can not but stimulate every one who reads the book. The general reader will find in it food for thought and, at the same time, relaxation. It is a pity that the American publishers have given us a reprint of the English edition, which is in small type. The matter is deserving of, and the reader is entitled to, a larger type, especially at the price charged.

THE PRACTICAL MEDICINE SERIES OF YEAR-BOOKS. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Issued Monthly. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume III. The Eye, Ear, Nose and Throat. Edited by Casey A. Wood, C.M., M.D., Albert H. Andrews, M.D., and T. Melville Hardie, A.M., M.D. December, 1902. Cloth. Price, \$1.50. Chicago: The Year-Book Publishers.

This small book contains a good collection of articles, mostly abstracts, which are very interesting and instructive reading.

One of the subjects in the chapter on nose and throat of special interest to a considerable number of physicians, is the effect of the suprarenal solution on the mucous membranes. Some writers claim it is of value as an anesthetic and of little value as a hemostatic, while others claim the opposite effect. One case is reported of a severe hemorrhage in a case of hemophilia which was controlled in thirty-six hours. Vansant claims that if the solution is applied by means of cotton wool, the usual anesthetic effect of cocain is increased and prolonged and is equivalent to that produced by a strong solution of cocain. This is due, Oppenheimer says, to the prevention of hemorrhage and the consequent loss of cocain from the tissues. It is also claimed that this temporary anemia retards healing and causes excessive sloughing of tissue following operation. We have noticed that the adrenalin apparently prolonged the anesthetic effects of cocain, but we doubt the correctness of the observation about sloughing.

HUMAN ANATOMY. A Complete Systematic Treatise by Various Authors, Including a Special Section on Surgical and Topographical Anatomy. Edited by Henry Morris, M.A., and M.B. Lond., F.R.C.S. Eng., Member of the Council (Lately Vice-President) of the Royal College of Surgeons of England. Illustrated by 846 Wood Cuts, the Greater Part of Which Are Original and Made Expressly for This Work by Special Artists, 266 Printed in Colors. Third Edition, Revised and Enlarged. Cloth. Pp. 1328. Price, \$6.00. Philadelphia: P. Blakiston's Son & Co. 1902.

It might seem on first thought that the frequent revision of a work on such an apparently fixed subject as anatomy would not be required, but such is not the case. Not only are many new points in the finer anatomy constantly coming out, but our comprehension of the meaning of many anatomic facts change with increasing knowledge of embryology, comparative anatomy, etc. Methods of teaching also undergo changes, so that it is as essential that a work on anatomy, in order to be modern, should be subjected to revision almost as frequently as text-books on other subjects. In this, the third edition, we notice many changes, noticeably the addition of a number of new illustrations, both colored and diagrammatic, which facilitate materially the study of this, to students, usually dry subject. The sections on surgical and topographic anatomy and on vestigial and abnormal structures are particularly interesting and instructive to the practitioner as well as the student. The matter is well arranged, and the whole work one of the best on the subject.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Assisted by H. R. M. Landis, M.D., Assistant Physician to the Out-Patient Medical Department of the Jefferson Medical College Hospital. Volume IV. December, 1902. Diseases of Digestive Tract and Allied Organs; Liver, Pancreas and Peritoneum—Anesthetics, Fractures, Dislocations, Amputations, Surgery of the Extremities, and Orthopedics—Genito-urinary Diseases—Diseases of the Kidneys—Physiology—Hygiene—Practical Therapeutic Referendum. Cloth. Pp. 422. Price, \$1.50. Philadelphia and New York: Lea Brothers & Co. 1902.

This work, which is really a serial in book form, contains in the present issue a digest of medical science under the heads given above. Each of these chapters is written by a known expert. The first is by Dr. Max Einhorn, whose authority no one will question; the second, on anesthetics and operative surgery, is by Dr. J. C. Bloodgood; that on genito-urinary diseases by Dr. William T. Belfield; the chapter on diseases of the kidneys is by Dr. John Rose Bradford, F.R.C.P.; a summary of the physiology is made by Dr. Albert P. Brubaker; hygiene is treated by Dr. Charles Harrington; the therapeutics section by Dr. E. Q. Thornton. The book, with its other quarterly issued volumes, is an epitome of medical progress which, we think, few physicians can afford to be without.

APPLIED SURGICAL ANATOMY Regionally Presented for the Use of Students and Practitioners of Medicine. By George Woolsey, A.B., M.D., Professor of Anatomy and Clinical Surgery in the Cornell University Medical College. With 125 Illustrations. Mostly Colored. Cloth. Pp. 521. Price, \$5.00. New York and Philadelphia: Lea Brothers & Co. 1902.

The practitioner soon learns to distinguish between the descriptive anatomy of the text-book and the practical or applied anatomy of the operating room and the bedside. Not that there is any difference in the anatomy, but the practical application of anatomic points in medical and surgical cases is a

study in itself. The author appreciates thoroughly this fact, and it has been his aim to bring before the practitioner applied anatomy in a practical, interesting and instructive manner. We may add, too, that he has succeeded exceedingly well, for the work is replete with useful and valuable facts and suggestions. There are a number of minor defects and errors, such, for instance, as the promiscuous use of inches and centimeters in measurements; the statement that the cranial bones never reproduce lost portions; that the speech center in right-handed persons is on the right side, etc., but these can easily be corrected in future editions, and should not be allowed to detract from the worth of the book. It is well worth careful study, and can be recommended.

ATLAS AND EPITOME OF DISEASES OF THE MOUTH, PHARYNX, AND NOSE. By Dr. L. Grunwald, of Munich. From the Second Revised and Enlarged German Edition. Edited, with Additions, by James E. Newcomb, M.D., Instructor in Laryngology, Cornell University Medical School. With 102 Illustrations on 42 Colored Lithographic Plates and 41 Text-cuts. Cloth. Pp. 219. Price, \$3.00 net. Philadelphia and London: W. B. Saunders & Co. 1903.

This is a small octavo volume, one-half of which is devoted to colored plates of the various lesions of the mouth, pharynx, nasopharynx and nose, with descriptive text, and 212 pages which also contain numerous illustrations. It is devoted largely to the special pathology and treatment of the more important classes of diseases involving these organs. The book is concise and well written, and will be a boon to many of the younger specialists and to physicians who are not thoroughly familiar with the diseases of these organs. The author may be heartily congratulated on the excellence of his work and the translator on having furnished a valuable addition for the libraries of Americans who are not thoroughly familiar with German.

TASCHENBUCH DER MASSAGE. Für Studierende und Aerzte. Von Dr. Erich Ekgren an der III. medicinischen Universitätsklinik zu Berlin. Mit einem Vorwort von Geh. Med.-Rath Prof. Dr. H. Senator. Mit 11 Abbildungen. Cloth. Pp. 90. Berlin: S. Karger. 1903.

This is perhaps the most concise little manual for the physician that we have seen. Of course, to those who do not understand German its usefulness would be very limited, though the illustrations are numerous and helpful. The author has condensed in less than 100 pages a large amount of instruction, and it seems to us there ought to be many physicians who can make use of the book. It has an advantage, not so common in many works of its size, of a convenient little index, and contains a list of the latest literature, which is, of course, as given in a German work, almost exclusively German.

BACTERIOLOGICAL TECHNIQUE. A Laboratory Guide for the Medical, Dental, and Technical Student. By J. W. H. Eyre, M.D., F.R.S. Edin., Bacteriologist to Guy's Hospital. With 170 Illustrations. Cloth. Pp. 375. Price, \$2.50 net. Philadelphia and London: W. B. Saunders & Co. 1902.

This work is intended as a guide to the medical student in bacteriology and is fairly well suited for its purpose. There is hardly any book that we can well compare to it, except perhaps that of Novy, which is one or two years behind it in point of publication.

Miscellany.

THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH.

A Statement of Work and Plans.

The Rockefeller Institute for Medical Research was founded in 1901 by Mr. John D. Rockefeller, who gave for this purpose the sum of \$200,000. The aims of the institute are the promotion of medical research, with special reference to the prevention and treatment of disease.

It was thought wise by the directors of the institute not, at first, to concentrate the work in any one locality, but to enlist the interest and co-operation of such investigators throughout the country as might be engaged in promising researches or who might enter on new fields if suitable pecuniary assistance could be afforded them. It was the conviction of the directors that in this way it would be possible not only to stimulate and foster valuable contributions to science, but also to secure important practical suggestions as

to the lines along which the institute might most wisely develop.

Among the large number of applications for assistance in carrying on original studies which relate to the cause, prevention and cure of disease and to the problems on which new knowledge on these subjects must be based, over twenty have been selected. The directors have secured counsel in these selections from the heads of departments or others in the universities of Harvard, Yale, Johns Hopkins, Pennsylvania, Columbia, New York, Chicago, Michigan, McGill, Wesleyan, California and Western Reserve, and in many of these institutions work has been prosecuted. Two of the Rockefeller fellows have been working in Europe. Some of the workers under these Rockefeller Institute grants, which vary in amount from \$200 to \$1,500, have completed and published their investigations; some are still engaged on them.

It is the purpose of the directors from time to time to bring together, in the form of volumes of collected reprints, the results of these researches, which may be published in various technical journals. An arrangement has been effected by which the institute will assume the publication of the *Journal of Experimental Medicine*, which will remain under the editorial supervision of Dr. William H. Welch, professor of pathology in the Johns Hopkins University, and president of the board of directors of the institute.

At the end of the first year of practical work of careful study of the situation, it became clear to the directors that existing institutions in this country, while in many instances carrying on most valuable researches in medicine, do not afford adequate facilities for many phases of investigation which are of the utmost importance and urgency. This is, in part, due to the lack of sufficient endowment, in part to the large demands made on the time and energy of the workers by their duties as teachers. It was further evident that such assistance as the institute had thus far been enabled to extend to selected investigators in various parts of the country had fostered work of great actual value as well as of high promise and should be perpetuated along similar lines.

The directors, however, were united in the conviction that the highest aims of the institute could not be secured in this way alone. Useful as such individual studies are, and important as it is to enlist and to maintain the interest of research workers in established institutions of learning, it is not possible in this way to secure the unity of aim and the co-ordination and mutual stimulus and support which are essential to the highest achievements in research. These are to be secured, it was believed, only by the centralization of certain lines at least of the work of the institute under a competent head or series of heads of departments, in a fixed place, with adequate equipment and permanent endowment.

There is no lack of men of sufficient training and experience ready to devote their lives to the solution of medical problems which bear directly or indirectly on the welfare of mankind. The widely open fields of research are many. Some of these relate to the application of existing knowledge to the prevention and cure of disease; others to the development of new knowledge along various lines of science, which, more than ever before, give promise of great significance in the problems of physical life.

In a broad sense, the directions and methods for the study of disease may be classified as morphologic, physiologic and chemical, and the institute, it was thought, should include departments providing for these divisions of the subject. For the morphologic study of disease there should be a complete equipment for pathologic-anatomic research. For the physiologic study of disease provision should be made for experimental pathology, for pharmacology and therapeutics, for the study of bacteria and other micro-organisms, with special reference to their relation to the infectious diseases, and for other investigations in personal and public hygiene, including preventive medicine. Here belong, especially, the problems of infection and immunity, and here also, in large part, such studies as require access to patients in hospitals. There should be a laboratory, well-equipped for investigations in physiologic and pathologic chemistry.

It was the conviction of the directors that such an institute might wisely add to its aims in the direct increase of the knowledge of disease and its prevention and cure, a phase of activity which should look toward the education of the people in the ways of healthful living, by popular lectures, by hygienic museums, by the diffusion of suitable literature, etc. For, in fact, the existing agencies for medical research for the most part stop short of those direct and widely diffused applications of newly won knowledge, on which the immediate practical fruitage of their work so largely depends.

In order that the causes and treatment of human disease may be studied to the best advantage, it was the opinion of the directors that there should be attached to the institute a hospital for the investigation of special groups of cases of disease. This hospital should be modern and fully equipped, but it need not be large. It should attempt to provide only for selected cases of disease, and the patients would thus secure the advantages of special and skilled attendance and such curative agencies as the institute might develop or foster.

It was thought that an institute for medical research of the largest promise would require a central institution, fully equipped and endowed, and with capacity for growth, in which the more comprehensive studies demanding the co-ordinated forces of various phases of science could be carried on from year to year; while, at the same time, by means of such grants of assistance as had been offered during the initial year, it should continue to make available the resources of special workers all over the country, as well as in Europe.

In view of the above considerations relating to its future, in June, 1902, Mr. Rockefeller gave to the institute the sum of \$1,000,000 for the purchase of suitable land, the erection of buildings, and the organization of a working force along the broader lines which had been projected. It is the purpose of the directors to proceed at once to the erection of a laboratory building which will provide for the present requirements and will be capable of enlargement as the character and extent of the work of the institute may develop. Negotiations for a suitable plot are now under way.

A small hospital will also be built in the immediate future, which will be maintained in close association with the experimental work of the institute.

Provision will be made in the laboratory building for research in physiologic chemistry, pharmacology and therapeutics; in normal and pathologic physiology, and in various phases of morphology, and for the study of bacteria and other micro-organisms. It is hoped that the laboratory buildings may be completed and ready for the commencement of work in the autumn of 1904.

Dr. Simon Flexner, professor of pathology in the University of Pennsylvania, will direct the scientific work when the building is completed. His colleagues deem it of the highest importance that the institute has been able to secure so eminent an investigator as Dr. Flexner to shape the work of its early years. Dr. Flexner will spend several months abroad while the new buildings are in course of erection.

It is proposed to organize the various sections and departments into which the work of the institute will naturally fall so that each of them, though in a measure autonomous, will still be so closely associated as to favor the conjoint investigation of comprehensive problems. Associated with the head of each of these departments it is proposed to have a staff of trained assistants.

Provision will also be made for research work by a group of trained men, to be designated fellows, scholars, etc., of the institute, under pecuniary grants of varying amounts.

Finally, opportunity will be afforded to suitable investigators not members of the regular staff of the institute to pursue special lines of research.

The directors of the institute are: Drs. William H. Welch of Baltimore, Theobald Smith of Boston, Simon Flexner of Philadelphia, and Drs. Hermann M. Biggs, C. A. Herter, L. Emmett Holt, and T. Mitchell Prudden of New York.

The officers are: Dr. William H. Welch, president; Dr. T. Mitchell Prudden, vice-president; Dr. L. Emmett Holt, secretary, and Dr. C. A. Herter, treasurer.

Association News.

RATES TO NEW ORLEANS.

One Fare for Round Trip in Territory of Central and Western Passenger Associations Assured.

Central Association.

The Central Passenger Association has granted a rate of one fare for the round trip on lines in its territory en route to New Orleans and return. This territory comprises Indiana, Ohio, Michigan, a small portion of Pennsylvania and southern Illinois.

Western Association.

The Illinois Central Railroad has granted a rate of one fare for the round trip from all points on its lines. Mr. H. J. Phelps, city passenger agent, informs us of this arrangement, and says that some other roads in the Western Passenger Association have granted the same rate and that more will follow. The Illinois Central Railroad reaches Omaha, Minneapolis, Sioux City, Iowa, and Sioux Falls, S. D., and the precedent established by this road will doubtless be followed by roads covering the large territory of the Western Passenger Association, which extends to Canada and to the Rocky Mountains.

Trunk Line Association.

This association covers New York, Pennsylvania, West Virginia, New Jersey, Delaware, Maryland and part of Virginia, and authorizes the following rate:

One first-class fare for the round trip from Washington, D. C.; and from other points in Trunk Line territory regular excursion fares to Washington or Trunk Line western termini added to one first-class fare authorized therefrom for the round trip; continuous passage tickets in each direction, to be sold and good, going, from Washington, D. C., May 1, 2, 3 and 4, and from other points May 1, 2 and 3, with final return limit to reach original starting point not later than ten days from date of sale, except by deposit of tickets by original purchaser with Joseph Richardson, special agent, Room 204, No. 204 Camp street, New Orleans, La., not earlier than May 1 nor later than May 12, between 8 a. m. and 8 p. m., and payment of fee of 50 cents at time of deposit, and extension of final return limit may be obtained to reach original starting point not later than May 30.

These conditions are in accord with the announcements in THE JOURNAL, Jan. 3 and 31, 1903, from the Southwestern Passenger Association.

Further particulars may be had from roads interested.

THE JOURNAL's special New Orleans number, April 11, will contain a complete statement of railroad rates from all parts of the country, as announced last week, page 597.

Medical Organization.

Lexington (Ky.) Medical Society.

On January 14 this society disbanded and then reorganized, adopting the constitution and by-laws proposed by the American Medical Association for subordinate societies and re-electing Dr. James C. Carrick, president; Dr. Louis H. Mulligan, vice-president; Dr. George P. Sprague, secretary, and Dr. Francis M. Greene, treasurer.

Berrien County (Mich.) Medical Society.

At the regular meeting of this society at Benton Harbor, February 12, the national plan of reorganization presented at the January meeting was adopted. Dr. Edward J. Witt, St. Joseph, was elected president; Dr. Charles N. Sowers, Benton Harbor, vice-president; Dr. John D. Greenamyer, Niles, secretary; and Dr. Frank M. Kerry, Benton Harbor, treasurer.

Dickinson-Iron County (Mich.) Medical Society.

Dr. Theodore A. Felch, Ishpeming, councilor of the twelfth district for the Michigan State Medical Society, organized this society at Iron Mountain, February 18, with the following

officers: Dr. John D. Cameron, Iron Mountain, president; Dr. C. Frithiof Larson, Crystal Falls, vice-president, and Dr. Samuel E. Cruse, Iron Mountain, secretary and treasurer.

Brown County (Wis.) Medical Society.

The physicians of this county met at Green Bay, March 26, and organized a county society to become a branch of the Wisconsin State Medical Society on its reorganization. The following are the officers: President, Dr. B. C. Brett; vice-president, Dr. A. W. Slaughter; secretary, Dr. Walter J. Hagen; treasurer, Dr. J. R. Minahan; censors, Drs. H. A. Wolter, D. J. O'Connor and J. P. Lenfesty.

Drew County (Ark.) Medical Society.

District Councilor Dr. Vernon McCammon, Arkansas City, met the physicians of Drew County at Monticello, in October, 1902, and explained the plan for reorganization suggested by the American Medical Association. A constitution and by-laws in conformity with these suggestions were adopted, and Dr. William T. Stanley, Selma, was elected president; Dr. J. G. McKinney, Nelson, vice-president, and Dr. James R. Tarrant, Monticello, secretary and treasurer.

Macomb County (Mich.) Medical Society.

At a meeting of physicians of the county at Mount Clemens, February 24, Drs. Leartus Connor and Andrew P. Biddle, Detroit, and Dr. Oliver Stewart, Port Huron, were present as delegates from the Michigan State Medical Society. A society was organized on the lines suggested by the American Medical Association for county societies, and the following officers were elected: President, Dr. Philip A. Knight, Utica; vice-president, Dr. Robert L. Parkin, Romeo, and secretary and treasurer, Dr. Joseph M. Croman, Mount Clemens.

Societies.

Medical Society of Alexandria (Va.)—At the annual meeting, February 16, Dr. William M. Smith was elected president; Dr. William R. Purvis, vice-president; Dr. Hugh McGuire, secretary, and Dr. Thomas S. Gibson, treasurer.

Allegan County (Mich.) Medical Society—At the annual meeting held in Allegan, January 28, Dr. Walter H. Bills, Allegan, was re-elected president; Dr. Milton Chase, Otsego, vice-president, and Dr. William S. Albright, Allegan, secretary and treasurer.

Medical Club of Philadelphia—The election of officers, January 22, resulted as follows: Dr. Edward E. Montgomery, president; Drs. Roland G. Curtin and Jonathan C. Biddle, vice-presidents; Dr. Guy Hinsdale, secretary, and Dr. F. Savary Pearce, treasurer.

Champaign County (Ill.) Medical Society—At the meeting, February 12, Dr. E. Fletcher Ingals, Chicago, delivered an address on "Medical Organization," which was freely discussed by the members. At the banquet which followed Dr. Ingals was the guest of honor.

Northeastern District (Mich.) Medical Society—At the meeting of this society in St. Clair, January 29, Dr. Albert E. Thompson, St. Clair, was elected president; Dr. W. P. Dierck, Marysville, vice-president, and Dr. A. Henri Cote, Port Huron, secretary and treasurer.

Burt County (Neb.) Medical Society—The physicians of the county met at Tekamah, February 11, and organized, with Dr. Andrew D. Nesbit, Tekamah, president; Dr. Mortimer L. Hildreth, Lyons, vice-president; and Dr. Isaiah Lukens, Tekamah, secretary and treasurer.

Nicollet County (Minn.) Medical Society—At the annual meeting, January 19, at St. Peter, Dr. Harry A. Tomlinson was elected president; Dr. Jared W. Daniels, vice-president; Dr. Mary P. Hopkins, secretary, and Dr. Walter H. Darling, treasurer, all of St. Peter.

Barry County (Mich.) Medical Society—The first annual meeting was held in Hastings, January 29, at which Dr. James M. Elliott, Hickory Corners, was elected president; Dr. Aleck F. Hutchinson, Nashville, vice-president, and Dr. J. G. McGuffin, Carlton Center, secretary and treasurer.

Eaton County (Mich.) Medical Society—The annual meeting was held in Charlotte, February 5. Dr. Giles B.

Allen, Charlotte, was elected president; Dr. Mary E. Greene, Charlotte, vice-president; Dr. Warren H. Rand, Charlotte, secretary, and Dr. H. Allen Moyer, Chester, treasurer.

Medical Society of the State of New York.—At its annual meeting in Albany the following officers were elected: Dr. Algernon T. Bristow, Brooklyn, president; Dr. Edward B. Angell, Rochester, vice-president; Dr. Frederic C. Curtis, Albany, secretary, and Dr. Ogilvie D. Ball, Albany, treasurer.

Ulster County (N. Y.) Medical Association.—At the regular meeting in Kingston, February 16, Dr. Henry Van Hoevenberg, Kingston, was elected president; Dr. George S. La Moree, Highland, vice-president; Dr. Mary Gage-Day, Kingston, secretary, and Dr. Alice Divine, Ellenville, treasurer.

Adams County (Neb.) Medical Society.—The physicians of the county met at Hastings, January 31, and organized this society with an initial membership of 20. Dr. Winfield Ackley, Juniata, was elected president; Dr. Jay G. Roberts, Hastings, vice-president, and Dr. Marble, Hastings, secretary and treasurer.

Nemaha County (Neb.) Medical Society.—The physicians of the county met at Auburn, January 28, and organized a medical society, with the following officers: Dr. Ira H. Dillon, Auburn, president; Dr. Benjamin F. Lorange, Brock, vice-president, and Dr. William E. Shook, South Auburn, secretary and treasurer.

Monroe County (Mo.) Medical Society.—This society has been organized at Paris, with the following officers: President, Dr. Benjamin D. Dysart, Paris; vice-presidents, Drs. C. H. Dixon, Holliday, and A. I. Griffith, Stoutsville; Dr. William B. A. McNutt, Monroe City, secretary, and Dr. Fred M. Moss, Paris, treasurer.

Ogle County (Ill.) Medical Society.—At its annual meeting in Oregon, January 7, the following officers were elected: Dr. William W. Burns, Polo, president; Drs. James Parkhurst, Grand Detour, and Jesse C. Akins, Forreston, vice-presidents; Dr. Horace Sheets, Byron, secretary, and Dr. Leo E. Schneider, Oregon, treasurer.

Hall County (Neb.) Medical Society.—The physicians of Hall County met at Grand Island, and organized a society as a component branch of the proposed reorganized state society. Dr. George Roeder was elected president; Dr. Henry D. Boyden, vice-president, and Dr. C. J. Horton, secretary and treasurer, all of Grand Island.

Johnson County (Neb.) Medical Society.—The physicians of the county met recently at Tecumseh and organized a county society, with the following officers: President, Dr. Malcolm Stewart, Tecumseh; vice-president, Dr. Edwin T. Black, Cook; secretary, Dr. Carlton K. Chubbock, Tecumseh, and treasurer, Dr. George J. Rubelman, Tecumseh.

Buffalo County (Neb.) Medical Society.—In pursuance of the plans suggested by the Nebraska State Medical Society, the physicians of the county met in Kearney, February 20, and organized this society, with the following officers: President, Dr. Frank A. Packard, Kearney; vice-president, Dr. James W. Miller, Gibbon, and secretary and treasurer, Dr. George M. Hull, Kearney.

Livingston County (Mo.) Medical Society.—About twenty physicians of the county met in Chillicothe, January 31, and organized a county society, with the following officers: Dr. Rueben Barney, Chillicothe, president; Drs. William L. White, Spring Hill, and William A. Swope, Wheeling, vice-presidents; Dr. Arthur J. Simpson, Chillicothe, secretary, and Dr. Byron N. Stevens, Chillicothe, treasurer.

American Electro-Therapeutic Association.—At the twelfth annual meeting held at the Hotel Kaaterskill, N. Y., the following officers were elected: President, Dr. Daniel R. Brower, Chicago; vice-presidents, Drs. Maurice F. Pilgrim, and C. Frank Osman, Boston; secretary, Dr. Clarence E. Skinner, New Haven, Conn., and treasurer, Dr. Richard J. Nunn, Savannah, Ga. The next meeting will be held in Atlantic City, N. J., September 22, 23 and 24.

Champaign County (Ohio) Medical Society.—At the January 29 meeting, held in Urbana, Drs. Horace Bonner, Dayton, state councilor for the district, Brooks F. Beebe, Cincinnati, and Charles L. Minor, Springfield, presented arguments for reorganization on the plan outlined by the American Medical Association. At the annual election of officers, February 19, Dr. Samuel M. Mosgrove, Urbana, was re-elected president; Dr. Davis R. Emmons, North Lewisburg, vice-president; Dr. Edwin W. Ludlow, Urbana, secretary, and Dr. David O'Brine, Urbana, treasurer.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, held Feb. 16, 1903.

President, Dr. Alexander Lambert, in the Chair.

A New Method of Fixation of the Movable Kidney.

Dr. W. GILL WYLIE commented on the relative frequency of movable kidney in women, and its frequent association with appendicitis, and cautioned the surgeon to make sure that it was really the kidney and not the appendix which was causing the pain. He considered that the effort so commonly made by surgeons to fix the kidney at the level of, or just below, the twelfth rib, as wrong in principle because of the fact that normally the kidney was not a fixed organ, but had a certain degree of mobility. He objected also to selecting this point for the anchorage of the kidney on the ground that if this were done the kidney would be pressed on by tight corsets and bands, thus causing discomfort. The object of his method of operating was to keep the kidney in good position and, at the same time, allow its moving slightly with respiration. The incision should be made just below the twelfth rib and the kidney replaced; then the capsule was pulled out with forceps until the resulting tension was sufficient to hold the kidney just above the twelfth rib and, at the same time, allow of the slight mobility normally possessed by this organ. Having cut away the redundant capsule, the ends were sutured to the fascial lining of the muscles about the opening by means of silk, and the muscles themselves were sewed with catgut.

Results of Kidney Fixation by Present Methods.

Dr. A. B. JOHNSON gave a brief sketch of the common methods for anchoring the movable kidney. As regards suture material, his own preference was for catgut.

Discussion.

Dr. J. A. BLAKE thought that failure to secure permanent fixation of the kidney often arose from a rotation of the organ by which it came to lie horizontally. He preferred catgut for the sutures, but thought it made little difference whether they were passed through the fatty or fibrous capsule, as they were only of service until granulations had formed.

Dr. JOHN F. ERDMANN remarked that, while he employed kangaroo tendon for the sutures, this was not a matter of much importance, and that if the patient could be kept sufficiently quiet the sutures might be entirely dispensed with.

Dr. A. H. GOELET condemned catgut as being too unreliable, and stated that his preference was for silk.

Dr. E. W. LEE said that when catgut was treated with the Credé silver salts it became strong and could not be stretched. The method of operating which he advocated consisted in splitting the capsule, rolling the latter back on either side into a roll, and making use of the latter for securing a firm hold with the sutures.

CHICAGO NEUROLOGICAL SOCIETY.

Regular Meeting, held Jan. 22, 1903.

The Vice-President, Dr. H. H. Donaldson, in the Chair.

Nature of Neuroglia Tissue.

Dr. G. CARL HUBER of the University of Michigan reported a study, extending over a series of years, of neuroglia tissue of different classes of vertebrates, made especially with Benda's sulphal-lizarate toluidin blue method. The research was undertaken with a view of harmonizing the various views expressed concerning the structure of neuroglia tissue and of obtaining data for experimental work. Tissue was studied from man, dog, cat, rabbit, dove, tortoise and frog.

The following general conclusions were reached: the neuroglia tissue of all vertebrates consists of neuroglia cells and neuroglia fibers. The cellular elements vary greatly in size and shape, depending in the main on the spaces which they occupy. In the majority of the neuroglia cells a granular cytoplasm can be clearly made out. This varies greatly in amount, at times forming only a narrow zone around the nucleus; again present in much larger quantity and presenting very distinct protoplasmic branches. In certain cells, which

are designated as "free nuclei," no distinct cytoplasmic covering can be seen. The nuclei of neuroglia cells vary in size, shape and structure. The majority of them may be spoken of as vesicular nuclei with chromatin in the form of a number of relatively large granules, variously disposed. Other nuclei, usually the smaller and smallest seen, present the appearance of compact masses of chromatin, taking the stain relatively deeply. Transition forms between these two varieties of nuclei may readily be made out. The neuroglia fibers show very definite relation to the neuroglia cells, being imbedded in the peripheral layer of their protoplasm. With the method used, whenever the preparation is properly differentiated, the neuroglia fibers could be traced through the protoplasm of neuroglia cells without interruption. In imperfectly differentiated preparations they often appeared as processes. The small, deeply-stained "free nuclei" and the free nuclei showing a vesicular structure show no definite relation to neuroglia fibers, and are looked on as undifferentiated and undeveloped neuroglia cells. Microscopic preparations substantiating the statements made were demonstrated.

Mesoblastic Origin of the Neuroglia Tissue.

DR. SHINKISHI HATAI, from the Neurological Laboratory of the University of Chicago, stated in preface that on examining cross sections of the central nervous system of the white rat and mouse, two kinds of nuclei, differently characterized, are easily recognized. One kind coincides in structure with that found in the nerve cells while the other resembles very much in size, shape and staining character, and in an internal structure, the nuclei found in the walls of the capillaries. These nuclei, so-called, are always surrounded by a small amount of cytoplasm. These facts led him to a systematic study of these structures in order to determine their origin within the central nervous system.

The tissues of new-born white rats and mice were fixed in Carnoy's mixture and the paraffin sections were stained with toluidin blue and erythrosin.

"One group of the nuclei, which resembles in structure as well as in shape those of the nerve cells, can be identified without difficulty as derived from the ectoblast. For convenience I called these nuclei Type 1. The identification of the other group of the nuclei, or Type 2, is, however, difficult since these nuclei have no similarity to the nuclei of the ectodermal derivatives. On examining the capillary wall, I noticed very frequently a nucleus projecting outward, and in some cases these nuclei were isolated from the capillary wall, but lay close to it. Between these two appearances, various intermediate stages could be easily found. In some cases, a tip of the nucleus is still attached to the capillary wall, while the rest of it has become separated. This appearance shows very plainly the migration of the nucleus from the capillary wall into the surrounding tissue. There is no danger of confusing these nuclei with those of the leucocytes which escape from the capillary wall and exhibit ameboid movements, since they differ from them both in structure and size; the former being very much larger than the latter. As soon as the nuclei are separated from the capillary wall they migrate away from the capillary."

Dr. Hatai thought there was no doubt that the nuclei called Type 2 were derived from the capillary wall and migrated away from it. "The identification of these nuclei, which have migrated from the capillary wall, with neuroglia nuclei, is difficult. Since it has been shown that a small amount of connective tissue is present in the central nervous system in both young and old animals, this connective tissue might have been formed by the nuclei which I am describing, but there is no evidence to support the view that this could occur. The large number of the nuclei which have migrated from the capillary walls suggests at once that some of the neuroglia tissue is supplied by these nuclei. This idea is favored by the fact that similar neuroglia nuclei to those migrated from the capillary wall or mesodermal in type, exist in the adult animal."

Dr. Hatai quoted Kuhne, Chittenden, Chavalier and other investigators and concluded "that the nuclei which migrate

from the capillary wall into the central nervous system are one source of the neuroglia tissue. The reasons for this conclusion may be summarized as follows:

"1. The great number of these nuclei; 2, neurokeratin may be formed not only by the cytoplasm of the ectodermal cells, but also by the cytoplasm in mesodermal cells; 3, presence of the nuclei of mesodermal type in the central nervous system of the adult animal; 4, ordinary connective tissue nuclei present in the central nervous system are there in much smaller numbers than the nuclei which have migrated from the capillary walls; 5, there is no evidence that the neuroglia fibers stained by the modern neuroglia technics are of ectodermal origin only; 6, since the cytoplasm undergoes very easily morphologic and structural alterations while the nucleus is more resistant, it follows that the nuclei are the better indication of the genetic relationship of the cells; 7, Capobianco and Fragnito, who observed the nuclei which migrate from the meninges into the central nervous system and believe these nuclei form a part of the neuroglia tissue, were unable to trace the successive transformations of the former to the latter.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Chronic Diarrhea.

Lyon, according to an abstract in *Amer. Med.*, states that where there is lenteric diarrhea the food must be as easily digestible as possible. Where the secretion of pepsin is deficient the food should consist of pure milk and of starchy vegetables prepared with milk. If there is hypopepsia accompanied by dilatation and active fermentation the stomach should be washed out. The treatment should be directed toward stimulating the remaining healthy glands of the gastric mucous membrane and which will combat fermentation. The first indication may be met by the administration of sodium phosphate in 2-gram doses (gr. 30) in half a glass of hot water or hot vichy water before breakfast. The following may be substituted:

R. Sodii chloratis	3iiss	10
Syr. belladonnæ	5i	30
Aq. destil.	3iv	120

M. Sig.: One dessertspoonful before each meal.

Small doses of sodium bicarbonate may also be given before meals. Massage to the stomach has produced very satisfactory results, acting as a tonic to the musculature, decreases stasis, which is a persistent cause of fermentation.

Constipation.

H. Surmont, in *Indian Med. Record*, recommends properly-selected food, which includes some of the coarser articles of diet, honey, cooked fruits, oranges and raisins. In the way of hydrotherapy he recommends cold water in the form of the abdominal douche with broken jets or cold compresses applied over the abdomen and covering them with waterproof cloth and over this a flannel bandage. These should be left in place for half an hour. Cold water should be drunk on rising and a cold enema occasionally.

Massage and Swedish gymnastics are to be employed in the treatment of atonic constipation. The faradic current is also of service. In the way of drugs he recommends psyllium seeds three teaspoonfuls a day, one after each meal, by placing them in a little fresh water and swallowing them. Linseed may be taken in the same manner in tablespoonful doses. The oils may be used, which are classified according to their action, as follows: Oil of sweet almonds, olive oil, castor oil. A teaspoonful of castor oil at bedtime gives, after a few days, good results. This may be given in capsule if necessary. If not sufficient to produce the results a teaspoonful may be given in

the morning. Calomel is of service as a cholagogue and should be given in small doses.

More trustworthy are those preparations which tend to produce muscular contraction of the intestinal coats. Among these preparations the author mentions cascara, senna, stychnia and ergot. His advice is to leave aloes, jalap and rhubarb alone. The latter especially increases the constipation after short amelioration. Strychnia should be given in doses of gr. 1/70 (.0009) three times a day. This may be alternated with cascara, the powder, extract or cascarn.

The following combination containing senna is recommended:

R. Pulv. senna (washed in alcohol)	5ii-s	10
Sulphuris sublim.	5i	4
Pulv. feniculi		
Pulv. glycyrrhizæ, ãã	5ss	2
Pulv. sacchari	5i	4

M. Sig.: One teaspoonful every evening or every morning where patients are unusually susceptible to the drug.

Podophyllin and euonymin are also recommended as follows:

R. Podophyllin	gr. 1/3	02
Saponis q. s.		
M. Ft. pil. No. i. Sig.: One or two daily.		
R. Euonymin	gr. 3/4	05
Saponis q. s.		
M. Ft. pil. No. i. Sig.: One or two daily.		

The following points are emphasized by the author: Diet and hygiene must always take preference over treatment by drugs. Drugs should always be used in small doses, tonic, so as not to stimulate too much a feeble muscular contractibility. No drug should be continued too long; discontinue it for a time and return to it again so as to prevent the system getting accustomed to it.

Enemas may be employed. To eight ounces of water two level tablespoonfuls of salt may be added or three of brown sugar or honey or from two to four of glycerin. The time most suitable for absorption seems to be an hour after breakfast or dinner, when the stomach begins to empty itself, and thus aids peristalsis.

Stimulating enemas and suppositories should not be employed daily as a catarrh of the rectum or colon may be set up and prevent their further use. They are, however, of great service to those individuals who complain that they never have any desire to go to stool, and in whom constipation appears to be connected with a diminution of the sensibility of the rectum. These patients should be instructed also to go to the closet at a certain time each day.

Excessive Perspiration.

The following powder containing salicylic acid is recommended to relieve excessive sweating of any parts of the body:

R. Pulv. acidi salicylici	3ii	8
Pulv. zinci carb. precip.	3ii	8
Pulv. magnesii ustæ	3iii	12
Pulv. amyli	3iiss	75

M. Sig.: Apply as a dusting powder.

Treatment of Buboës.

William A. Groat, in *N. Y. Med. Journal*, states that the treatment of buboes which show signs of suppuration, comprises rest in bed, removal of the exciting cause or inhibition of its virulence and local application to the inflamed gland. The patient must remain in a recumbent position, with light, non-stimulating liquid diet. One-tenth grain of calomel should be administered every hour until the bowels move freely, and subsequently salines should be given throughout the course of the disease. Calcium chlorid in three to five-grain doses should be given three times a day.

If acute gonorrhœa is the cause the urethra should be irrigated two or three times a day, with at least two quarts of warm, normal salt solution followed by a weak solution of some of the organic silver compounds. Later the number of irrigations may be decreased to one daily, and the strength of the silver solution increased. All sores on the penis should be cauterized, and if secondary symptoms have appeared mercurials should be pushed.

Locally to the inflamed glands the following combination should be applied:

R. Ichthyol	5i	4
Guaiacol	3ss	2
Ung. hydrarg.	3ss	2
Lanolini q. s. ad.	5v	20

M. Sig.: Apply thickly over the swollen glands, cover with gauze and a layer of cotton or cotton wool dressing.

C. D. Luckett, in the same periodical, recommends the following local application:

R. Ung. hydrarg.		
Ung. belladonnæ		
Ichthyol		
Lanolini, ãã	5iv	15

M. Ft. unguentum. Sig.: Apply locally every other day until resolution is accomplished.

Joseph N. Weller recommends the application of the following:

R. Tinct. opii	5i	30
Liq. plumbi subacet. dil.	Oi	480

M. Apply locally on gauze saturated and place an ice bag over this compress.

When there is much induration the following is recommended:

R. Iodi	gr. v	30
Pot iodidi	gr. xx	130
Lanolini	5i	30

M. Sig.: Apply locally.

The author has obtained good results by injecting the following into the diseased parts:

R. Acidi carbol.	5iss	6
Aq. destil. q. s. ad.	5i	30

M. Sig.: Inject a few drops of the solution into the gland at various points by means of the hypodermic syringe. These injections should be made once a day for three days. A good point he brings out is that this watery solution permeates the gland more thoroughly than the pure drug, which only cauterizes in a limited area.

In debilitated persons tonics containing iron, quinin and strychnin should be given. If there is suspicion of the trouble being tuberculous, guaiacol in doses of five minims should be given internally. Rest and elevation should be carried out in all cases until all of the acute inflammation has subsided.

Bromoform.

The following combination is recommended by Scoville in administering bromoform:

R. Bromoformi	5ss	2
Tinct. tolutani	5i	4
Mucil. acaciæ	3ii	8
Syrupi simp.	5iv	15
Aq. menth. viridis q. s. ad.	5ii	60

M. Place the mucilage in a bottle and add an equal volume of the syrup, then add the bromoform and tincture of tolu, shaking well after each addition.

The following formula is sometimes employed in administering bromoform:

R. Bromoformi	gtt. x	65
Alcoholis	5i	4
Syr. simp.	3iii	12
Aq. destil.	3iiss	105

M. Sig.: One to two tablespoonfuls every hour.

Eclampsia.

Maygrier, in the *Med. Press*, states that as soon as the diagnosis of albuminuria is made every pregnant woman should be placed on a milk diet and put to bed. When eclampsia is diagnosed the first thing is to relieve the system of toxic principles and to calm the nervous excitability. The first indication is filled by blood-letting—withdrawing from ten to twelve ounces as rapidly as possible, followed by an injection of artificial serum equivalent in amount to the blood withdrawn. The agitation and excitability are best controlled by a few whiffs of chloroform and an enema of chloral. He does not recommend rapid delivery as the eclampsia could persist after delivery, and on the other hand pregnancy could continue after the attack. Only two complications could

warrant intervention: Anuria or a rise in temperature. Beyond these conditions the pregnancy should not be interrupted. If labor has set in then every means should be taken to perform rapid delivery.

Medicolegal.

Special Damages to Physician Which Must Be Pleaded.

—What is entitled in the Court of Appeals of Kentucky "the case of the Louisville & Nashville Railroad Company vs. Reynolds" was brought to recover for personal injuries, by the latter party, who stated on the witness stand that he was a practicing physician, making a specialty of diseases of the eye, ear, nose and throat for something like thirty years. His allegation as to the damages was that he "was badly bruised and injured in his person, and his health and vitality permanently impaired, and his ability to walk with ease and comfort permanently and greatly decreased, and he was also caused great mental and physical suffering, and for a long time rendered incapable of attending to his business; whereby he has been damaged in the sum of \$10,000, for which he prays judgment and all proper relief." For 17 or 18 days after his injury he was not able to sit up, and at the end of three months was not able to ride in a street car. The jury returned a verdict for \$9,166.66, under an instruction allowing them to find, among other things, such an amount as would fairly and reasonably compensate him for the value of time lost. But the Court of Appeals holds that the petition in this case was not sufficient to admit evidence that he was injured during the best time of the year for his practice, when he earned something more than \$100 per day. It says that the fact that this was the best season of the year for him in the practice of his specialty, and that the time he lost was so valuable, was not to be inferred from his injury, or the bare allegation that he lost time; and, to justify a recovery of items so unusual, the fact should have been specially pleaded. In other words, it applies the rule that where special damages are not such as the other party would naturally anticipate from the injury, they must be pleaded with sufficient particularity as fairly to apprise him of the charge which he is to meet.

Validity of Notes Given to Unlicensed Practitioners.—

The Supreme Court of Nebraska holds, in the case of the Citizens' State Bank of Newman Grove vs. Nore, that a note given for medical services by an unlicensed practitioner may be recovered on by a bona fide purchaser, notwithstanding the provisions of article 1, chapter 55, of the Compiled Statutes, prohibiting the practice of medicine without a license. It says that in that state a statute will not be construed so as to make a negotiable instrument void in the hands of a bona fide purchaser unless the act specifically so declares. Article 1, chapter 55, of the Compiled Statutes of Nebraska makes it the duty of all persons desiring to practice "medicine, surgery or obstetrics" in that state to obtain a certificate from the state board of health, and to file the same with the clerk of the county in which they desire to practice. Section 15 provides: "No person shall recover in any court in this state any sum of money whatever for any medical, surgical or obstetrical services unless he shall have complied with the provisions of this act and is one of the persons authorized by this act to be registered as a physician." Section 7 declares it to be unlawful for any person to practice in any of these lines without first obtaining and registering such certificate; and section 16 makes it a misdemeanor to so practice, and imposes a fine therefor. It will be seen, the commissioners say, after thus summarizing the legislation invoked in this case, that none of these provisions declares a contract for medical services by an unlicensed practitioner to be void. Indeed, while section 15 provides that "no person shall recover," the latter part of the section indicates that this prohibition is limited to the practitioner himself. Again, they say that they fully recognize the importance of such legislation as the medical act. It embodies a fixed and time-honored policy of the most vital concern to the state and its people.

But it may well be questioned whether the evils consequent on the free circulation of the notes given for services of unlicensed practitioners could be more serious than the derangement of business resulting from a rule that would make all such notes void in the hands of innocent purchasers. It must be remembered that instruments like these have no earmarks and, when once it is understood that a limited and indistinguishable class of them is deprived of the virtues of negotiability, a step is taken toward casting the taint of suspicion on all.

Liability for Necessaries Furnished the Quarantined.—

A Texas statute provides that: "Whenever the commissioners' court of any county has reason to believe that they are threatened at any point or place within or without the county limits with the introduction or dissemination of a dangerous, contagious or infectious disease that can and shall be guarded against by quarantine, they may direct their county physician to declare and maintain said quarantine against any and all such dangerous diseases; to establish, maintain and supply stations or camps for those held in quarantine; to provide hospitals, tents or pest houses for those sick of contagious and infectious disease; to furnish provisions, medicine and all other things absolutely essential for the comfort of the well and the convalescence of the sick. The county physician shall keep an itemized account of all lawful expenses incurred by local quarantine, and his county shall assume and pay them as other claims against the county are paid." The Court of Civil Appeals of Texas holds, King County vs. Mitchell, that a proper interpretation of this statute would require that a county whose commissioners' court has determined that they are threatened with the introduction or dissemination of a dangerous, contagious, or infectious disease, that can and should be guarded against by quarantine, and has directed the county physician to declare and maintain such quarantine, should furnish to those thus detained such provisions, medicines and other things as are absolutely essential to their comfort and convalescence, and is legally liable therefor. It can not hold, it says, that it is optional with a county to assume the duty of supplying these things. Nor can it assent to the contention that the county would be relieved of this duty because of the fact that there was no county physician to keep the itemized account of the expenses incident to the quarantine after the county physician had resigned. The beneficial purpose of the statute was to supply to those detained in quarantine such things as were absolutely essential to their comfort and convalescence, and the duty of the county physician in the particular of keeping an itemized account of expenditures is, at most, only ministerial in its nature, and the liability of the county not made to depend on his compliance. If such were the case, the county could in the most meritorious cases avoid all liability by refusing to appoint such auditing officer. Further, it was the duty of the county judge to appoint another physician on the resignation of the county physician referred to. Here the county made an order directing a quarantine, appointed a county physician, who established such quarantine, placing guards, etc., knew of the resignation of the county physician, and continued thereafter to maintain such quarantine, without providing another, and without in any manner providing for the wants and necessities of those thus affected by the order and, the court holds, must be held to have consented to the party suing supplying such things as it was legally liable for, but which it had made no arrangements to supply. However, such an account, the court holds, could not be treated as a verified one under the state statute requiring denial by affidavit before trial if to be disputed. To treat it as such an account, and to deny the right of cross-examination as to the correctness or reasonableness of the items sued for, the court says was material error, for it was certainly pertinent to inquire into the correctness and reasonableness of the items, to the end that the county be not held liable save in the event the "provisions, medicine and other things" appeared to be "absolutely essential for the comfort of the well and the convalescence of the sick," considering the nature and extent of the quarantine.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

February 21.

- 1 *Chronic Pancreatitis. B. L. Hardin.
- 2 *Some Further Results in the Treatment of Pulmonary Tuberculosis. J. H. Elliott.
- 3 *Dangers from the Indiscriminate Use of Morphin. T. D. Crothers.
- 4 *Routine Examinations of Chyme. A. L. Benedict.
- 5 *Briefs on Physical Training. G. Frank Lydston.
- 6 *Gonorrhea in Children. H. Lowenburg.
- 7 *Vital Statistics: A Plea for Actuarial Administration and Control of the Great Resources of Preventive Medicine. (Concluded.) John S. Fulton.
- 8 The Importance of Mechanical Manual Training to the Surgical Student. S. D. Van Meter.

1. **Chronic Pancreatitis.**—This disorder was first described in 1896, but has been fully understood only within the last eighteen months. Hardin reports a case and discusses the anatomy, etiology, etc. He thinks the cause is obstruction due to calculi lodged in the pancreatic duct, pressure from gallstones, infection by micro-organisms, or to toxic substances in the blood. The symptoms are severe hypogastric pain, central in situation, nausea and vomiting, jaundice, diarrhea or constipation, undigested muscle fiber in the dejecta and in rare cases lipuria. In advanced cases glycosuria occurs. The diagnosis is difficult. The presence of undigested muscle fiber in the stools and the absence of carbohc acid in the urine after the administration of salol are good tests, but we must base the diagnosis mainly on jaundice, paroxysmal epigastric pain, midepigastic tenderness and resistance, rapid loss of flesh and strength with absence of marked anemia and leucocytosis, the presence of undigested muscle fiber and the peculiar reaction of the urine to the phenylhydrazin test. In many cases exploratory operation should be done. The disease may be a chronic one, but early operation generally gives good results and mortality will be practically nil. If sugar is found in the urine the prognosis is unfavorable for it means that the pancreas is pretty nearly destroyed.

2. **Tuberculosis.**—The experiences at the Muskoka Cottage Sanatorium for the treatment of tuberculosis are reviewed by Elliott, who reports very favorable results.

3. **Morphin.**—Crothers pleads against the careless use and prescription of morphin as causing the morphin habit.

4. **The Gastric Test.**—Benedict gives details of the examination of the stomach contents after the test meal, using bread and butter for the simple test meal, and allowing one and one-fourth hours. In a meal containing meat and vegetables, one and one-half to two hours. He prefers the use of the large tube to bring out the contents. The various tests for acidity, carbohydrates, bile, proteids, etc., are described, as well as the microscopic findings. He remarks that it is worse than looking for a needle in a haystack to attempt to diagnose ulcer, cancer, catarrh, etc., from the microscopic examination. For any serious investigation with regard to these points the jejune stomach should be washed out. Scraps of exfoliated gastric epithelium are practically always found. Setting aside cancer and ulcer it is exceedingly difficult to distinguish between the normal shedding of epithelium and the indications of genuine gastritis. He says he is disposed to think that almost every stomach is almost constantly in a state of localized catarrh.

5. **Physical Exercise.**—In this first article Lydston speaks of the mistakes that have been made in prescribing exercises in a routine way, leading to such measures as advising postmen to take walks or gripmen to indulge in free exercise in the open air. There should be a department of physical training attached to the chair of therapeutics in every modern medical school. The value of a knowledge of physical training in the special departments such as neurology and surgery, especially orthopedic surgery, is obvious.

6. **Gonorrhea in Children.**—Lowenburg reports a case in a four-year-old child who probably infected himself by his hands

as he was in the habit of handling rags and clothes from the refuse boxes. The lesson which the case teaches, he says, is:

1. All urethral discharges in young boys should be viewed with suspicion.
2. All such discharges should be submitted to a microscopic examination.
3. Should the gonococcus be found the possibility of the case assuming a medicolegal nature should be remembered.
4. The question of rape should be carefully eliminated or conclusively proved.
5. Treatment consists in securing local cleanliness and a free action of the emunctories in conjunction with the administration of urinary antiseptics and alkalies.
6. Gonorrhea is no contraindication to circumcision.
7. Vulvovaginitis in little girls is very often due to gonorrhea.

7. **Vital Statistics.**—In the conclusion of his article, Fulton insists on the importance of thorough local registration covering:

1. Records of death made at the time and place of their occurrence, by the most competent persons acquainted with the facts, including a medical certification of the cause of death, the making and filing of such a record being in every instance an indispensable preliminary to the disposal of the dead body; 2, records of birth, secured by the payment of fees, by every appeal to private interest and public necessity, including, if possible, conditioning of certain privileges of citizenship on recorded evidence of attained age; 3, records of marriage and divorce, with all such items of information as have statistical importance; 4, records of sickness, including all cases of those infectious diseases which fall within the provisions of the notification laws, all cases of sickness which come under study in the public health laboratories, all sickness which is relieved at public cost, all sickness falling under the observation of inspectors of schools, tenements and factories, and all sickness occurring in the public services, *c. g.*, Army, Navy, police, and fire departments.

Finally, the data of vital statistics should be systematically utilized, not only for the broader purposes which have grown into common use, but for the minuter inquiries which such records may answer.

Medical News, New York.

February 21.

- 9 New York Academy of Medicine.—Address. Robert F. Weir.
- 10 The Young Practitioner. Andrew H. Smith.
- 11 *Functional Disorders of the Biliary Secretion and Their Treatment. H. Richardson.
- 12 *The Treatment of Tuberculosis. Charles W. Heitzman.
- 13 *A Contribution to the Surgery of the Internal Saphenous Vein. William F. Campbell.
- 14 *Empyema of the Accessory Sinuses of the Nose. J. H. Woodward.
- 15 A New Sputum Slide. James R. Arnell.

11. **Functional Disorders of the Liver.**—These conditions which may be included under the head of morbid excess, morbid deficiency and a vitiation of the bile, are noted by Richardson. He remarks that a considerable percentage of the population is more or less affected by gallstones, judging from the Johns Hopkins autopsy reports, about 7.5 per cent. in this country. The surgeon seems to have the monopoly of treatment of these conditions, but he still thinks much may be done with drugs. He speaks particularly of the use of glycocholate of soda.

12. **Tuberculosis.**—Heitzman briefly reviews the general facts in regard to the treatment of tuberculosis and concludes that the hope for the future is in hematotherapy and serum-therapy.

13. **The Internal Saphenous Vein.**—From a number of experiments performed on 50 subjects, Campbell finds a considerable variation in the tributaries of the internal saphenous, and that the proper point in which to ligate is that portion of the vein which lies between its last tributary and the saphenous opening. This space is about $\frac{3}{4}$ of an inch in length, varying somewhat in different subjects. A circle about the size of a five-cent piece ought to fix the limits within which we can expose this portion of the vessel. The author found that the end of a line, $3\frac{1}{2}$ inches long, projected from the spine of the pubes at right angles to Poupert's ligament, will always fall within this circle. The end of this line marks the point for the center of the incision, which should be about one inch long and parallel with the fold of the groin. In retracting the edges of the incision, retract the upper edge so as to ligate as near the saphenous opening as possible.

14. **Empyema of the Accessory Sinuses of the Nose.**—Woodward describes the various conditions of suppuration in the accessory sinuses in which he includes the ethmoidal cells. In view of the variations in the size and position of the frontal sinus he gives the following rule:

Almost without exception, when they exist at all, the frontal sinuses will be found immediately underneath the triangles constructed as follows: Connect the supra-orbital foramina or notches by a horizontal line, drop from its mid-point a vertical to the fronto-nasal suture, and complete the triangles by lines drawn from the naso-frontal end of the latter to each respective supra-orbital foramen. Thus two triangles are constructed above the root of the nose, through which even the smallest sinus may be opened. The anterior wall of the sinus may be 8 mm. in thickness, although, as a rule, it is very much thinner. In operating through the anterior wall of the sinus, our course should be directly backward. If, however, we have traversed in this direction 8 mm. of bone without opening the sinus, it would be wise to change the course of the excavation to downward, backward, and inward, toward the uvula. Thus, opening the anterior cranial fossa may be avoided, while our explorations would expose even the smallest sinus, or, in the absence of the sinus, open into the anterior ethmoid cells.

He prefers to approach the frontal sinus through the anterior wall as it gives a chance for more thorough treatment. To reach the maxillary antrum he would prefer an opening high up in the soft parts under the upper lip, which will remain open long enough for lavage and drainage. It is not advisable in his experience to irrigate the antrum even with the mildest solution for a longer period than four or five weeks. Irritating antiseptics should never be used. If, after treatment, pus formation is marked a large opening for drainage may be cut in the wall of the inferior meatus and the sinus irrigated as circumstances require. Of course the obstruction in the nose should be removed as a preliminary treatment. Suppuration in the ethmoidal cells he attacks preferably by the intranasal route. They may be opened through the ethmoidal sinus and through the orbit, but only when there is complicating sinusitis or orbital abscess and even then the intranasal operation should still be performed. The sphenoidal sinus should be approached through the intranasal route after removal of the middle turbinated bone.

New York Medical Journal.

February 21.

16 *A Critical Review of Some of the Recent Literature of Tuberculosis. Jonathan Wright.

17 *Pulmonary Anesthesia. W. A. Bryan.

18 A Case of Intussusception in a Baby Five Months Old. Louis Fischer.

19 Pyemia and Exsection of Part of the Lower Jaw Following a Fracture Due to Tooth Extraction. J. A. Hofheimer.

20 *The Prophylaxis of Appendicitis. H. Illoway.

16. Tuberculosis.—Wright reviews the literature of the transmission of animal tuberculosis to man. He questions the possibility of this, holding that Koch's paper has done a great deal of good, though his views are not original. The inhalation of bacteria is also studied and he finds both from his own studies and the recent work on the subject by Saenger that the bacteria can not penetrate very well to the alveolar regions by inhalation. He suggests a discussion of the diagnosis of tuberculosis, which is probably often erroneous. Influenzal hemorrhages sometimes simulate early tuberculosis, as suggested by Donelan. The laryngeal and pharyngeal forms of tuberculosis and their curability are also discussed at some length. In conclusion he speaks of the serum cure, which from reports has a rather encouraging prospect. He suggests that if we could form the habit of going to Germany for our facts and to England for our deductions, we should in the former find a more abundant harvest, and in the latter a more trustworthy separation of the wheat from the chaff.

17. Pulmonary Anesthesia.—Bryan says that the paralysis of respiration due to forcing the anesthetic and the crowding of blood in the right heart which occasionally occurs during the second stage, may cause distension beyond the power of contraction, and death ensues. He suggests that the means to prevent the second stage of struggling in anesthesia are ample and the co-operation of the patient can often be usefully employed. A patient at the beginning of anesthesia had to be held by four men; he was released and told to clasp his hands. He immediately became quiet and did not move again until he came out of the anesthetic. Death may occur from paralysis of the heart from over-dosage and from the operation, especially in the region of the fifth nerve. Care on the part of the anesthetist can prevent either of these accidents. These statements are especially applicable to chloroform. Death may occur instantaneously from paralysis of the heart during complete anesthesia; from damming of the blood in the right heart at a stage when it is preventable, and from

paralysis of the heart due to operative interference in incomplete anesthesia; from obstruction of the respiratory passages, causing asphyxia, and from the combined shock of anesthesia and operation. In the last two cases it is usually preventable. In impaired respiration or heart function, the rule is to lower the head to allow a freer flow of blood to the brain and the heart, but where an intra-abdominal obstruction to diaphragmatic function is causative of the symptoms, as in abdominal tumors, the only course is to elevate the head and relieve the pressure of the tumor on the heart. When conjunctival reflexes are gone, we are reasonably certain of surgical anesthesia. On giving too much or too little of the anesthetic, particularly ether, the pupil dilates. The question is whether this dilation is a danger signal or a sign of too little anesthesia. He says close the eye, open it again in the presence of light; if the pupil reacts to light, the patient is safe and more ether can be given; if the pupil will not respond to light too much ether has been given, and we must wait for the pupil to respond. Under complete anesthesia, when the steady, straightforward stare of the eyes is supplanted by a nystagmus, it means the patient is coming out from under the drug and needs another dose. In surgical anesthesia, respiration is regular, full and stertorous. A deep sighing respiration nearly always precedes the appearance of reflexes and should be recognized as their forerunner. The general circulation should be watched in all cases as an index to the condition of the blood and heart. He speaks in conclusion of chlorid of ethyl as a valuable anesthetic, being quicker in action with a quicker return of consciousness. He ranks danger as regards mortality as: 1. Chloroform; 2, ether; 3, ethyl chlorid, and fourth, nitrous oxid. He gives ethyl chlorid through a tight-closed cone that allows a spray of the liquid to run on a piece of gauze, over which all the inhaled air must pass, and containing an outlet valve, so as not to permit waste by expiring through the same opening. This agent is peculiar in that not every case is completely relaxed by it, and ocular reflexes are not always destroyed, but otherwise the anesthesia is complete.

20. Appendicitis.—Illoway considers constipation the principal factor and one much more common than is generally recognized, the patients themselves not estimating their own condition properly.

Medical Record, New York.

February 21.

21 *The Treatment and Care of Consumptives at Their Homes, and the Urgent Need of Local Sanatoria. S. A. Knopf.

22 *The Present Status of Surgery of the Gall Bladder and Bile Ducts. William J. Mayo.

23 *Post-operative Malaria, with a Report of Two Cases. John T. Moore.

24 *Trachoma in the Public Schools of New York. Walter E. Lambert.

21. The Home Treatment of Consumption.—Knopf gives a description of appliances for the care of the sputa, directions for the care of the patient, use of light, air and hydrotherapy and pleads for the establishment of a sanatorium in the neighborhood of every large city.

22. Gall Bladder Surgery.—The percentage of latent gallstones commonly accepted is held by Mayo as probably too high, and he asks the question what causes latent calculi to become active. Remarking on the theory of Kehr, who attributes everything to infection, and the other more generally adopted one of mechanical interference with drainage, he thinks both have their share. He compares the condition with appendicitis, which may have its alternations of aggravation and rest. In some cases the results of early operation for gallstone disease are remarkably good. The death rate under his hands was less than 1 per cent. In the later stages, however, after repeated attacks of biliary colic, with adhesions and general infection of the parts, the condition is different and operation is fraught with some danger. It is in this class of cases that cancer of the gall bladder is most likely to occur. In 49 of his cases stones were found in the common and hepatic ducts, with or without jaundice, but in any event necessitating a very serious operation. Infection of the liver ducts introduces a serious element in the prognosis. Most deaths after operation he attributes to this cause.

23. Post-Operative Malaria.—The revival of malaria after operations or injuries, which is a matter of common faith among physicians of malarial districts, has been denied, but Moore here reports two cases, which he thinks prove the correctness of the belief. He suggests a blood examination by the microscope in every case from a malarial locality before operation, and says that many infections which have lain dormant for weeks, months and even years may be rekindled. Malarial fever, especially the chronic forms, brings out a very unfavorable condition for the healing of wounds and the reaction from the shock of the anesthesia and operation. It is reasonable to suppose, he holds, that many cases of fatality after operation are due to the presence of the malarial parasite.

24. Trachoma.—The conditions in the New York schools are reviewed by Lambert, who believes in thorough inspection and a special hospital for the treatment of all contagious eye diseases in New York City. It would be important, of course, to have the inspectors thoroughly competent men, who will examine the upper as well as the lower cul-de-sac of the eye.

Boston Medical and Surgical Journal.

February 20.

25 *Observations on Long-Distance Runners. J. B. Blake and R. C. Larrabee.—The Blood. Ralph C. Larrabee, Wilder Tles-ton and Wm. R. P. Emerson.—The Hearts. Ralph C. Larrabee and Lawrence W. Strong.—Kidneys. John M. Connolly.

26 *Medical Treatment of Intestinal Obstruction. Thomas F. Harrington.

25. Long-Distance Runners.—This subject takes up most of this issue and includes general observations as to the condition of the runners, pulse, weight, temperature, condition of the blood, heart, kidneys and physical characteristics. The distance run was about twenty-four miles over a more or less hilly country. The effects seem to have been largely physiologic; pathologic conditions were not noted. So far as known none suffered serious or permanent harm from the race. The heart changes seemed to be physiologic. The article is an interesting study.

26. Intestinal Obstruction.—The different forms of intestinal obstruction and their non-surgical treatment are described by Harrington. In cases where foreign bodies have been swallowed, he advises against castor oil administration, but to give food that will produce bowel evacuation. Examine the rectum frequently as the foreign body often lodges there. In intussusception he thinks it best to chloroform the child, lay it on its back, and slowly inject one or two gallons of warm water into the rectum. He remarks that the rectum is capable of holding 6 quarts (?). Large enemata should always be tried before advising surgical interference. He thinks the experience with exploratory laparotomy offers little to endorse this short road to knowledge. The article is one that rather depreciates the value of surgery in these cases.

Philadelphia Medical Journal.

February 21.

27 *Tropical Diseases.—Abscess of the Liver. Charles F. Kieffer.

28 *The Toxemia of Pregnancy. (To be Continued.) William H. Wells.

29 *Uterine Carcinoma—Its Treatment by the Combined Use of the Finsen Light and the Roentgen Ray. George G. Hopkins.

30 Report of a Case of Transverse Myelitis in a Newborn Infant. Alexander H. Davison and D. J. McCarthy.

31 *Retinal Hemorrhages: An Aid to the Early Recognition of General Arterial Degeneration. Henry C. Haden.

27. Tropical Diseases.—This fifth lecture by Kieffer is devoted to abscess of the liver and more especially to tropical abscess, which is in the vast majority of cases due to the *Amoeba dysenteriae*. Predisposing causes, however, are necessary. These are usually found in the free living, both as to alcoholic beverages and food, but especially the former. The natives are quite as liable to it as the Europeans if they follow the same habits of diet and drinking. European women and children are, as a rule, free from this complication. There is a small group not due to this cause, but to the *Balantidium coli*, and the various pyogenic organisms may have their causal action. Cantlie holds that all intrahepatic abscesses are amoebic, and that the so-called "idiopathic abscesses" are suprahepatic, or subhepatic, that is, abscesses

of the dome or concavity. The symptoms may be obscure; hectic range of temperature, liver enlargement, sense of weight and fullness, occasionally deformity, pain especially in the right shoulder and occasionally a sharp pain in the esophagus in swallowing, while a hacking unproductive cough may be present. There is characteristic decubitus; the patient lies well over on his right side with the shoulder drawn down and the knee drawn up. Jaundice is rare. Ascites only occurs when the abscess presses on the portal vein, which is of some importance in the operative treatment. The old-fashioned way of leaving the abscess to "determine its own direction" is condemned; the "determined" spot is usually a grave. The proper method is to operate; 90 per cent. of cases of single abscess operated on fairly early recovered. If spontaneous rupture occurs into the colon, about one-half recover; rupture elsewhere is not nearly so favorable. The diagnosis is difficult. The common mistake is to call the condition malaria, but he points out the differences, especially the character of the fever, occurring at or near the same hour every day, which is clearly not malaria. In all obscure cases, he says, attended with signs of sepsis, insert an aspirator to make the diagnosis sure. Leucocytosis is of some importance. It may be absent, but its presence is corroborative. Sometimes the abscess may be intimately connected with the parietes, though it is difficult to be sure as to locality. Usually when the liver is punctured, respiratory excursion gives a pendulum-like movement of the needle. In this class of cases this movement may be absent. The treatment will be discussed in a coming lecture.

28. Toxemia of Pregnancy.—The theory of convulsive seizures of eclamptic or pregnant women is coming to be that they are due to a general toxic state of the blood, instead of being so exclusively a kidney affection as was formerly held. Wells has had opportunity to note the effect on pregnant women of stomach and intestinal catarrh following influenza. He thinks these are often the predisposing cause of what seems to be a rather resistant form of toxemia. Most of the cases occur in full-blooded rather than in anemic women. The symptoms are generally headache, pain and soreness about the eyes, occasionally photophobia, a dull and heavy feeling, sensitiveness to changes of weather, frequent urination with less than normal quantity, a sort of pyrosis, occasional nausea and edema. He describes several cases and remarks that the symptoms are quite different from those usually described in text-books, except those of recent date. The first case briefly mentioned is one in which the kidneys seemed to be suffering most, with albumin and casts, mental dulness with general symptoms pointing to uremia. The second type, of which several cases are reported, presents symptoms of chronic gastrointestinal catarrh, but with a urine characteristic of toxemia. He holds that in the excretion of urea we have the most valid index of solid excretion. This is never as great in amount in the pregnant as in the non-pregnant condition, and an increase in the toxic symptoms is almost invariably preceded by decrease in the urea percentage. It is impossible to lay too much stress on the value of clinical study of the urine of pregnant patients. He always looks with suspicion on any headache, nausea or indigestion in pregnant women and instructs them to report at once if they have any of these symptoms. The pathology is noted—changes in the kidney, heart, liver and brain.

29. Carcinoma of the Uterus.—Hopkins finds the combined light and x-ray treatment of special advantage in uterine cancer and describes the arrangement which he has made for securing it. He would give about an hour's exposure to the Finsen light and about five or eight minutes to the x-ray as a treatment. This has given good results.

31. Retinal Hemorrhages.—With a report of two cases of retinal hemorrhage and remarks on the importance of the symptoms, Haden concludes as follows:

1. Retinal hemorrhages, associated with high arterial tension and accompanied by transitory albuminuria, are significant of beginning widespread arterial degeneration.

2. That in those cases of so-called physiological or transitory albuminuria, occurring in active, healthy young business men or students, in those who are working under forced pressure, ophthalmoscopic examination should be made for retinal hemorrhages.

3. When retinal hemorrhages occur without albuminuria, the patient should be kept under observation, the urine to be examined from time to time and the quantity passed noted.

4. In case of finding these conditions, it is our duty to warn the patient of his condition, and, as Osler says, "so gain his intelligent co-operation," and preserve his life and usefulness.

Cincinnati Lancet-Clinic.

February 21.

- 32 A Trunk Sewer for Mill Creek Valley. Louis Schwab.
- 33 A Plea for Spring-time Movers. Evelyn B. Dodd.
- 34 Neuralgia. F. Pirnat.
- 35 Surgery of Prostate, Pancreas, Diaphragm and Spleen. (Continued.) D. Merrill Ricketts.

St. Louis Medical Review.

February 7.

- 36 Views Suggested by the Study of the Etiology of Puerperal Eclampsia. J. K. Bauduy.

February 14.

- 37 Recent Radical Operations for Cancer of the Uterus. Fred J. Taussig.

American Journal of Obstetrics, New York.

February.

- 38 *Transabdominal Intra- and Extra-peritoneal Uterovesical Grafting. Dougal Bissell.
- 39 Intra-abdominal but Retroperitoneal Shortening and Anterior Fixation of the Round Ligaments for Posterior Uterine Displacements. F. F. Simpson.
- 40 *Intramural Extraperitoneal Anchorage of the Round Ligament for Posterior Displacement of the Uterus. George H. Noble.
- 41 Two Hysterectomies for Fibroma Uteri. H. Grad.
- 42 Sarcoma of the Uterine Parenchyma. Henry D. Beyen.
- 43 Hepatoptosis. Irving Miller.
- 44 Strangulated Hernia in Children Under One Year; Report of a Case Twenty-seven Days of Age; Herniotomy; Recovery. W. B. Reid.
- 45 *Management of Difficult Breech Presentations. H. J. Stacey.
- 46 *Thoughts on the Prophylaxis of Puerperal Eclampsia. Douglas H. Stewart.

38. Uterovesical Grafting.—Bissell's method consists in finding the ureter through an incision in the anterior surface of the broad ligament, and a dissection downward between the broad ligament folds, passing the forceps through the urethra into the bladder and up to the posterior vesical wall just below the junction of the broad ligament and the bladder, then incising the bladder between the blades and dragging the ureter through and anchoring it with an intestinal silk suture. He claims this method is most direct, admits of extraperitoneal manipulation and extraperitoneal implantation at the point of selection of the bladder wall; shifts the ureter but slightly from its normal direction, and allows thorough provision for leakage through the vagina at the base of the extraperitoneal space within the folds of the broad ligament.

40. Retro-Uterine Displacement.—The method here described by Noble is, in brief, the intramural extraperitoneal implantation of the round ligaments. Through a transverse incision in the lower abdomen the round ligament loops are brought forward and the ends fastened together, if long enough to meet on the median line, in front of the recti muscles. He has thus anchored the uterus 67 times and claims many advantages for the operation: a single incision through which pelvic complications may also be treated; the strong uterine end of the ligament is utilized; there is no vesical irritation or dysuria or interference with the normal mobility of the uterus, no sutures in the fundus to irritate the uterus, absence of tendency to hernia, no encroachment of the bladder or abnormal shortening of the ligament, and the fixation is extraperitoneal. The danger of operation, he thinks, is about equal to that of exploratory abdominal incision.

45. Difficult Breech Presentations.—This article considers only those cases in which one is confronted by a difficult, but not impossible, breech presentation. Such is most often seen in primiparæ, where the child is disproportionately large because the mother's pelvis is slightly contracted or the child is unusually large; it may also occur in any case where the cervix, vagina, and perineum are unyielding; or even in multiparæ when the child is disproportionately large. It includes original breech presentations, and those changed into breech by version. Labor is allowed to progress as usual until the breech is nearly to the pelvic floor; that is, until the child is sitting on the recto-vaginal septum. The patient is placed in the dorsal position and anesthetized profoundly. The child is then pushed carefully upward and both feet brought down,

the possession of both feet giving the operator better control of the child. With the child's thighs in the cervix, dilate with the hand until the cervix is practically paralyzed; meanwhile dilate the vulvar orifice and vagina fully with the hand and closed fist, the success of this method being dependent on the thoroughness of the dilatations. During these dilatations gradually withdraw the chloroform. See that the cord is out of the way. Grasp the feet and draw the child slowly down until the umbilicus is nearly to the mother's vulva, while the assistant, or operator's own hand, if necessary, keeps the head well flexed so as to avoid extension and consequent catching at the pelvic brim. The operator then makes strong traction while the assistant presses down on the head firmly; if the woman is sufficiently aroused from the anesthetic, instruct her to expel the child with all her strength. The head then passes down the parturient canal, escaping the grasp of the cervix uteri, a little rotation of the child's hips, or side-to-side pull, serving to deliver the child to the shoulders. The arms and shoulders are then quickly delivered, delivering the posterior arm first, then rotating and delivering opposite arm (following the method well described on page 786 in Hurst's Obstetrics, 3d edition). The assistant then takes the child while the operator quickly delivers the head with forceps. The advantages of this method are: 1, the time of the labor is shortened; 2, there is little or no laceration of the mother, and 3, the child is neither strangulated nor mutilated because of being caught by the cervix or perineum.

46. Puerperal Eclampsia.—The treatment advised by Stewart is avoidance of noise, excitement and alarm, using hot packs to excite perspiration, frequent small venesections if necessary. He also notices the possible advantages of using irrigations of normal salt solution. We should carefully lower the amount of nitrogen in the food and increase the aggregate of its discharge, and in this way we have gone a long way in the prophylaxis of the condition.

Brooklyn Medical Journal.

February.

- 47 *Hookworm Disease—A Newly Recognized Factor in American Anemias. Charles W. Stiles.
- 48 Infant Diarrheal Mortality in Brooklyn—Its Cause and Preventability. Louis C. Ager.
- 49 Note of a Case of Gunshot Wound of the Neck. G. R. Fowler.
- 50 Report of a Case of Laceration of the Subclavian Artery from a Fractured Clavicle. Wm. E. Butler.
- 51 Memorial Address, Kings County Medical Society. James P. Warbasse.
- 52 A Case of Puerperal Psoriasis. A. M. Judd.
- 53 The Overindulgence in Fluid as an Etiological Factor in the Production of Stomach Disorders. Hugh E. Rogers.

47. Uncinariasis.—Stiles points out the differences between the American and cosmopolitan form of uncinariasis, and remarks as to the economic importance of the disorder as it occurs in the South, especially in sandy regions. The great point is to instruct country physicians as to the disorder itself, and to educate the rural population is the best means of prophylaxis, preventing infection from drinking water polluted by dejecta, etc.

Annals of Surgery, Philadelphia.

February.

- 54 *An Operation for the Radical Cure of Aneurism Based upon Arteriorrhaphy. Rudolph Matas.
- 55 *Cases Illustrating Some Important Points in the Diagnosis and Treatment of Abdominal Contusions Associated with Visceral Injuries. George E. Brewer.
- 56 Intraperitoneal Rupture of the Bladder. Daniel F. Jones.
- 57 A Case of Pancreatic Cryst, with Remarks on the Pathology and Surgical Treatment. Charles G. Cumston.
- 58 *The Question of Surgical Intervention in Cases of Injuries to the Spine. John C. Oliver.
- 59 *Post-Typhoid Infection of Ribs. J. Shelton Horsley.

54. The Radical Cure of Aneurism.—Matas describes in detail the methods of treatment of aneurism, with illustrations, and in conclusion submits in substance the following conclusions: 1. That the recognized advantages of the radical operation for the cure of aneurism are: the peripheral arteries as shown by statistics, are increased. The operation can be performed by the adoption of the method of excision instead of the method of extirpation, as the arterial orifices are multiple, and the arteries are not obliterated. That the method of excision is the best.

by means of suture, and within the sac itself, greatly simplifies the technique of the radical operation and is a reliable means of securing hemostasis. 3 That in favorable cases such as sacular aneurisms with a single orifice communicating with the lumen of the larger arterial trunks, it is possible by careful suture to obliterate the aneurismal opening without obstructing the lumen of the parent artery, thus lessening the risk of gangrene. 4 It is also possible in favorable cases of fusiform aneurisms of traumatic origin, and in those in which the sac material is pliable and healthy, to restore the lost continuity of the artery by building a channel which will connect the two main orifices of communication and restore the interrupted circulation in the parent vessel. This can be done by utilizing the sac in the manner described by the author. 5 The fear that atheroma and other degenerative changes will interfere with the healing and repair of the arterial tunics has been greatly exaggerated, as shown by abundant experience of the a-septic period in the ligation of sclerotic arteries in continuity, in the absence of secondary hemorrhages in the amputated stumps of the aged, diabetic, and other arterially diseased subjects, and is still more fully demonstrated by the statistics of Delbet, Kubler, Ransohoff and others who have reported numerous successful results in spontaneous as well as in traumatic aneurisms. 6 The fallacy and dangers of the old operation of Antyllus lie, first, in the fact that the preliminary ligation of the main artery above and below the sac does not always control collateral bleeding, hence compels a more or less extensive dissection of the sac out of its bed as one of the necessary features of the procedure to include all the collateral vessels, the difficulties of the operation are increased and the vitality of the limb is endangered by interfering with the collateral circulation. An other serious objection to the old Antyllian operation is that the sac is allowed to remain as an open cavity in the bottom of the wound, where it is picked or drained and allowed to heal by granulation, thus inviting infection, suppuration and secondary hemorrhage. All this is obviated by the author's method of endoaneurismorrhaphy, which does not disturb the sac from its vascular connections and favors its prompt obliteration by suturing the infolded walls of the sac, and keeping them in direct and close approximation. 7 The dangers and uncertainties of extirpation of the sac are often more apparent because, in addition to the technical difficulties, there is the great risk of injury to the accompanying satellite veins and nerves which blend most intimately with the sac and often compel the surgeon to make his operation a partial one. The greatest objection, however, is in the interference with the collateral circulation, which entails a considerable risk of mortification in the distal parts. All these dangers are reduced to a safe minimum, and are largely eliminated by simply obliterating the sac, instead of extirpating it.

55 **Abdominal Contusions**—Brewer notes the possibilities of abdominal contusions in the way of rupture of the viscera, liver, spleen, bladder, etc., and considers that in the earliest stages of abdominal injury, pain, tenderness and muscle rigidity are the most prominent and reliable signs. Their association is almost pathognomonic of peritoneal irritation. In the absence of spontaneous pain, localized tenderness with rigidity is strongly suggestive of visceral injury. Muscular rigidity, however, is the most reliable and sometimes the only sign. Spasm of one or more of the abdominal muscles following a traumatism may be looked on as Nature's efforts to protect the injured organ from further irritation. Vomiting is occasionally present, but is not always an accompaniment. The occurrence of free fluid in the peritoneal cavity, shown by the different percussion signs in different positions, is valuable. The presence of a large amount of fluid feces in the colon may rarely lead to error. Their specialized diagnosis, Brewer considers, is rarely possible. He reports a number of cases illustrating the points which he has brought out. He favors the treatment of extensive fractures of the spleen by pressure and gauze picking rather than by splenectomy. This is also applicable to the liver. It gives less shock, saves time and preserves an important organ. Speed of operation, perfection

of technique and the ability to administer at any moment the most vigorous stimulants are the most important requisites of success. The assistants should be prepared to give saline infusions at the time the peritoneal cavity is opened.

58 **Injuries to the Spine**—Oliver holds that it is proven that complete transverse lesion of the cord is hopeless, and asks if a correct diagnosis of such can be made. He reports cases as showing the utility and effects of operation. On the whole, his opinion seems to be favorable to delay in operating in cases of spinal injuries. It gives them a chance for spontaneous recovery or improvement.

59—See abstract in THE JOURNAL, XXXIV, p. 1410.

Albany Medical Annals.

February

60 Dr. Lorenz's Clinic in New York, December 18, 1902. Charles D. Davis

61 *Infantile Diabetes Mellitus. Howard D. Lomax

62 *Surgery of the Stomach, with Report of Cases. Albert Van der Veer

63 *Therapeutic Effects of Roentgen Rays on Malignant Growth, Report of Cases. Arthur F. Holding

61 **Infantile Diabetes Mellitus**.—Diabetes in children has not an extensive literature, but seems to be pretty thoroughly reviewed by Lomax, who describes the symptoms and reports cases. He discusses the general subject of diabetes, its pathology, etc., and remarks that no recoveries from infantile diabetes have been recorded. The cases reported varied from 2 to 16 years of age. One case in an adult was also mentioned. Some benefit seems to be derived with occasional fasts for twenty-four hours or so in removing unfavorable symptoms for the time being.

62 **Surgery of the Stomach**.—Vander Veer discusses surgery of the stomach, and reports two cases of complete removal of the organ, one of which was successful.

63 **Roentgen Rays**.—Holding reviews the cases published in the literature of malignant growths treated by this agency and reports personal observations of a number. He thinks that, from the uniformly good results reported, we may be too sanguine as regards the beneficial effects of the rays in malignant tumors. There are probably unsuccessful cases that are not reported.

Annals of Gynecology and Pediatrics, Boston.

February

64 *The Roentgen Ray in Gynecology. Elen V. Delphey

65 Report of a Case with Autopsy. Loren A. Sanders

66 *Further Report on the Use of Ethyl Bromid as a Primary Anesthesia to Ether. Emery Marvel

67 *Portal Anastomosis with Report of a Case. Daniel H. Craig

64 **The Roentgen Ray in Gynecology**.—Delphey finds that the ray has a somewhat lesser value in the diagnosis in gynecologic conditions, and is principally useful in the treatment of malignant neoplasms.

66 **Ethyl Bromid Anesthesia**.—Marvel finds the advantages of using ethyl bromid anesthesia as a preliminary to ether anesthesia over that of the administration of ether alone are the lesser time required, reduction of the discomfort to the patient taking ether by the absence of bronchial irritation and increased mucous secretions, less excitement and the danger of injury to which the first stage of ether narcosis is liable, the smaller quantity of ether required, more rapid regaining of consciousness and the lessened tendency to post-anesthetic vomiting. He has employed the method in 33 cases since the former report which he made, and 30 of these were celiotomies. The time required to secure unconsciousness varied from ten seconds to two minutes, an average of twenty-five seconds.

67 **Portal Anastomosis**.—The case reported by Craig seemed to be completely relieved by the Talma Morrison operation, which is described. The technique was somewhat different from that ordinarily used. The lower extremity of the omentum after having been some time exposed to the air and rubbed with a dry gauze sponge, was tucked down into the sulcus formed by separating the peritoneum about two inches in all directions, being placed thus between the outer surface of the peritoneum and the muscle. Six catgut sutures were used to secure the end of the omentum within this pocket to the

24. Trigger-Finger.—Four cases are described by Barnard, who discusses the condition and its probable cause. The thumb seems to be most commonly affected, next the ring, the middle, the little and the index finger. The most typical cases are undoubtedly due to changes in the tendon, producing a local enlargement which snaps below the osseofibrous arch opposite the metacarpo-phalangeal joint, or, in the case of the thumb, between the two sesamoid bones and beneath the ligament which unites them. The cause of the snap, however, may be in the joint and some irregularity of the anterior surface producing the trigger action. For the treatment of those due to sudden injuries, rest on a splint with pressure from a pad placed over the swelling and later massage, appears to be the suitable and successful treatment. Where a definite nodule has been formed and persists, it is correct to expose the tendon and dilate according to what is found, either removing the mechanical obstacle or overcoming the disproportion between the tendon and its sheath. The most scrupulous asepsis must be followed.

25. Acute Rheumatism.—The substance of this article is largely included in that already abstracted in THE JOURNAL of February 28, ¶1, p. 609, by R. M. Beatson and E. W. Ainley Walker.

26. Paraffin Prosthesis.—This gives in substance Paget's experience, which has been already analyzed in a former article, abstracted in THE JOURNAL of January 31, ¶4, p. 338.

27. Color Blindness.—Bickerton takes up this question, showing the deficiencies of present practice, the imperfections of the Holmgren test, the frequent successful appeals, which destroy confidence in the test and the necessity of examining for color sense not only the officers, but the sailors who may be put in positions of trust as lookouts, etc., where the perfection of the color perception is essential.

Journal of Tropical Medicine, London.

February 2.

- 32 Photographs Illustrating the Parasites of Malaria in a Stained Dehemoglobinised Thick-film Preparation. Ronald Ross.
- 33 *The Relationship of Kala-azar with Mediterranean Fever and Some Details of the Hematology of the Latter. P. W. Bassett-Smith.
- 34 Ethyl Chlorid as a Substitute for "Gas" in the Tropics. J. Preston Maxwell.
- 35 Malarial Fever in the Isthmus of Suez. J. E. Cresswell.
- 36 On Nagana and Other Trypanosomes. Dr. Schilling.

33. Kala-Azar.—Bassett-Smith points out the differences which exist between kala-azar and Malta fever, which have been considered by Bentley to be identical. He thinks the principal differences of kala-azar from Malta fever are in the greater degree of infectivity and more rapid diffusion, the high mortality, more constant hypertrophy of the liver and spleen and the greater degree of emaciation and pigmentation produced on the one hand and the absence of those neuralgias and peripheral neuritic symptoms of Malta fever on the other. The identity of the two diseases is not proven.

Bulletin de l'Academie de Medecine, Paris.

- 37 *Report of Committee on Liqueurs and Essences Used in Their Manufacture.
- 38 Note sur l'urgente nécessité d'appliquer la vaccine obligatoire à l'Indo-Chine française. Hervieux.

37. Liqueurs and Essences.—Laborde is chairman of a committee which comprises Brouardel, Lancereaux, Cornil, Magnan, Pouchet, Motet and Joffroy. Their report gives a list of the most dangerous essences used in the production of liqueurs, and urges their absolute prohibition or stringent measures for their control. The essence or volatile oil of absinthe is so dangerous that its sale should be absolutely prohibited, as also the oil of rue, of gaultheria, of hyssop, of illium, of angustura, salicylic aldehyd and benzoic aldehyd or prussic acid. All these essences—the French use the term essence to express a volatile oil—are used in the manufacture of various liqueurs, and they should be unconditionally prohibited, on account of their peculiarly toxic character, or at least a prohibitory tax imposed. In a second list they include the essences, whose sale should be regulated, but need not be suppressed entirely. This includes the oil of pepper-mint, spirit of anise, oil of nutmeg, oil of cloves, oil of mace and sixteen others. The report concludes with a clinical por-

trayal of some of the effects of the habitual use of beverages concocted with these volatile oils, followed into succeeding generations, referring to Féré's research on the influence of alcohol and essences on the incubation of hen's eggs. The secret recipes for several liqueurs are given, showing the large proportion and the number of dangerous essences that enter into their composition.

Bulletins de la Societe Med. des Hop. de Paris.

- 39 (No. 27.) Les flux bilieux dans la cholémie familiale. A. Gilbert and P. Lereboullet.
- 40 Le pseudo-ulcère stomacal d'origine biliaire. Ibid.
- 41 Le signe d'Argyll-Robertson et la lymphocytose du liquide céphalo-rachidien. Vidal and Lemierre.
- 42 (No. 28.) Cas d'appendicite pneumococcique. Ferrier.
- 43 De la lymphadénie lymphatique aleucémique. E. Weil and A. Clerc.
- 44 (No. 30.) Tabes hérédito-syphilitique. (Tabes héréditaire). J. Babinski. Two cases.
- 45 (No. 32.) Lymphocythémies aleucémiques. Vaquez and Riberre.
- 46 De l'influence favorable de la ponction lombaire sur le vertige Voltaïque et sur certains troubles auriculaires. J. Babinski.
- 47 *Clinical Relations between the Mumps and Pneumococcus Infection. Simonin.—Pneumococcie et infection ourlienne.
- 48 (No. 33.) Vomissements (vomiting) acétoniques. L. Guillon.
- 49 Résultats négatifs du sérum proposé par le Dr. Leurlaux pour traiter la coqueluche (anti-whooping cough serum). G. Variot. Three cases.
- 50 Du traitement de l'hémoptysie par l'adrénaline. Souques and Morel.
- 51 (No. 34.) Ibid. L. Renon and Louste.
- 52 Nature, évolution et durée de la réaction méningée dans le zona. A. Chauffard and G. Froin.
- 53 Arthrites blennorrhagiques. H. Vaquez and C. Laubry. Two cases.
- 54 (No. 35.) *Recherches sur les éliminations urinaires et la physiologie pathologique des néphrites scléreuses chroniques. H. Claude and F. Burthe.
- 55 Rhino-pharyngite typhoïdique à bacilles d'Eberth. P. Gallols and others.
- 56 (No. 36.) Cas de paralysie ascendante aigue; névrite radiaire sans altération méningée; absence de lymphocytose dans le liquide céphalo-rachidien. F. Vidal and L. Le Sourd.
- 57 La radiographie du crâne (of skull) et le diagnostic de l'acromégalie. A. Bécère.
- 58 *The Typhoid Bacillus in the Blood. J. Courmont and C. Lesieur. Le bacille d'Eberth dans le sang des typhiques.
- 59 *Ibid. F. Vidal.
- 60 (No. 37.) Le diagnostic radioscopique du diverticule de l'œsophage. A. Bécère.
- 61 *Quelques résultats du traitement des névralgies par les injections sous-cutanées d'air atmosphérique. P. Marie and O. Cronzon.
- 62 *Efficacité de l'argent colloïdal (collargol) dans le traitement des maladies infectieuses; multiplicité de ses indications. Netter.
- 63 (No. 38.) *Ibid. L. Renon.
- 64 *Fèvre typhoïde traitée par le collargol. L. Renon and Louste.
- 65 A propos du collargol. Moutard-Martin.
- 66 Ulcères multiples du pylore et gastrosuccorrhée sans stase. M. Soupault. Two cases.
- 67 (No. 39.) *2 cas de pneumonie traités par le collargol. Moutard-Martin.
- 68 Les suites éloignées (remote consequences) de la méningite cérébro-spinale. Vidal and Lemierre.
- 69 Néphrites chroniques bilatérales consécutives à des lésions traumatiques d'un seul rein (of a single kidney). J. Castaigne and F. Rathery.
- 70 (XX, 1.) Note sur quelques particularités cliniques des paralysies diphthériques. C. Aubertin.
- 71 Nouvelle méthode de recherche du bacille tuberculeux. A. Jousset.
- 72 (No. 2.) L'inoscopie appliquée au diagnostic des ascites tuberculeux. Bécère. See THE JOURNAL of Feb. 21, p. 547.
- 73 *Argent colloïdal. Indications diverses. Mode d'emploi. Doses. Effets. Mécanisme de son action. Netter.
- 74 La duodénite ulcéreuse urémique. E. Barie and P. Delaunay.
- 75 Les lésions du système lymphatique postérieur de la moelle sont l'origine du processus anatomo-pathologique du tabes. P. Marie and G. Guillaïn.
- 76 (No. 3.) Ulcérations hémorragiques de la peau (skin) et des muqueuses (mucous membranes) dans l'urémie. P. Dalché and H. Claude.
- 77 L'adrénaline dans un cas d'hémorroïdes irréductibles avec menace d'étranglement. A. Mossé.
- 78 *Recovery in Case of Atrophic Cirrhosis of the Liver Treated "in extremis" with Liver. Galliard.—Guérison d'une cirrhose atrophique du foie soumise "in extremis" à l'opothérapie hépatique.
- 79 *Gamma hérédito-syphilitique guérie par les injections locales d'iodure de potassium. Labadie-Lagrave and M. Rollin.
- 80 Les angines banales chez les rougeoleux adultes (angina in measles in adults). Etude clinique et bactériologique. Simonin.
- 81 Une nouvelle observation de phlébite syphilitique secondaire. A. Renault and G. Roussy.

47. Mumps and the Pneumococcus.—Simonin describes 8 cases in which a pneumococcus infection coincided with or preceded the mumps. Laryngo-bronchitis has been frequently observed in the course of or consecutive to mumps, and his experience indicates that this disease induces a peculiar pre-disposition to pneumococcus infection, and also that the latter

germ acquires greater virulence in its symbiosis with the mumps germ. He therefore urges prophylactic measures to avoid the double infection.

54. Elimination in Chronic Sclerous Nephritis.—Claude and Burth made a most careful study of seven cases of this affection and tabulate the findings. They show that the elimination in the urine is profuse for a long time, thanks to a peculiar adaptation of the cardio-vascular system to the condition of the kidney. The glomerulo-tubular systems become hypertrophied and compensate the lesions of sclerosis until the heart becomes affected or some infection or intoxication causes inflammation in the glomerulo-tubular systems, after which insufficiency of the kidney becomes manifest and more or less permanent.

58-59. Typhoid Bacillus in the Blood.—Courmont found the typhoid bacillus constantly in the blood in 37 typhoid patients, all adults, from the first days of the disease to the end of the third week. They inoculated 300 to 500 c.c. of bouillon with 2 to 4 c.c. of blood. In 6 cases the bacilli were found long before the agglutinating test was positive. Widal's experience has been that he could not cultivate the bacillus from the blood in 5 very mild cases of typhoid fever. It was found in 17 out of 20 moderate or severe cases, examined from the fifth to the fifteenth day. In 5 cases the staphylococcus was found with the typhoid bacillus, and in 2 of the negative cases it was found alone. In another negative case a streptococcus and a colon bacillus were found in the blood. He inoculates 400 c.c. of bouillon with 4 c.c. of blood. Agglutination was positive in all the cases.

61. Injections of Air in Treatment of Neuralgias.—Marie has been giving Cordier's method of treating neuralgia by injections of air a trial in his service. He reports that 2 out of 3 patients with sciatica were benefited after several repetitions of the injection. One of the patients was relieved at once and permanently. A third of a liter of air was injected at three different points. A patient with neuralgic zona was also relieved at once and likewise a tabetic. In lumbago the relief was merely transient.

62 et seq. Colloid Silver in Infectious Diseases.—Netter is professor agrégé and physician to the Trousseau Hospital, where he has been testing since November 15, Credé's colloid silver, better known as collargol. A child of 7 with acute pericarditis received an intravenous injection of 2 c.c. of a 1 per cent. solution, with three frictions of 2 gm. each of the collargol salve. The child's recovery was rapid, resembling in every respect the curves of pericarditis published by Wenckebach, showing the great benefits of collargol treatment. Other cases were pneumonia, meningitis and typhoid fever and the results were apparently good. Netter remarks that the favorable action of the collargol is first marked by the subsidence of the temperature, then by the general well-being, similar to the relief afforded by antidiphtheria serum. Renon states that Follet of Paris has been treating patients with various affections since 1898, with silver powder in suspension. He reports that a large number with acute or chronic tuberculosis have been treated with silver powder injected once or twice a week. He mixes about 1 gm. of the powder with 60 gm. of artificial serum and 10 gm. of oil of guaiacol and eucalyptol. The cough and expectoration have gradually disappeared and the majority now consider themselves cured. The injections are made in the buttocks and are not painful. Renon also calls attention to a patient with typhoid fever treated after the tenth day with collargol frictions, using 3 gm. at a time of the 15 per cent. salve. The temperature fell after the second rub and the disease was evidently aborted after the fourth. No other treatment was used and the depression and delirium of the onset indicated that the case promised to be severe. Martin found rapid improvement in 2 cases of pneumonia. Netter's experience now includes 9 cases of pneumonia, and the same of typhoid fever, 14 of bronchopneumonia, 4 of severe scarlet fever and 37 of diphtheria. He emphasizes especially the remarkable results attained with it in several cases of malignant diphtheria. The results have also been fine in a case of puerperal infection and in one of infectious

endocarditis and of endocarditis in articular rheumatism. No benefit has been apparent to date in tubercular affections in his experience, nor in any cases of cerebrospinal meningitis, erysipelas, phlegmon of the breast or adenitis. He ascribes the efficacy of the colloid silver to its catalytic action rather than to its bactericidal power. Bredig has established that platinum, gold and silver in the colloid state behave like a true ferment, an inorganic ferment accelerating the chemical transformations by their presence in infinitesimal quantities the same as the figured and the organic ferments.

78. Organ Treatment of Cirrhosis of Liver.—A woman had been treated at intervals for nearly a year on account of advanced cirrhosis of the liver. She was much emaciated and scarcely urinated at all, while the ascites and edéma were excessive and recurred after every puncture, notwithstanding a strict milk diet and diuretics. Pig's liver was then ordered for her and she took 150 gm. a day. In a few days the urine became clear and abundant. The edema and ascites subsided and the patient was able to get up in ten days. The improvement continued and in five months she was able to abandon the liver without recurrence of symptoms. About a year after the last symptoms had disappeared she returned to the hospital complaining of scanty urine (800 gm. a day). It contained urobilin. After resumption of the liver for a few days, the urine returned to normal and the patient's recovery has been undisturbed since, more than two years and a half since the liver treatment was first commenced. Galliard has treated a number of cases of cirrhosis in this way during the past few years, but none showed such surprising benefit as this one.

79. Local Treatment of Gumma.—The gumma developed on the leg at the same time as a keratitis was observed, both indications of hereditary syphilis, presenting no manifestations until the subject was 25. The gumma was as large as a hen's egg, and was treated with daily local injections of 2 c.c. of a 3 per cent. solution of potassium iodid at a little distance from the lesion. By the seventh day it had entirely disappeared.

Dermatologisches Centralblatt, Berlin.

- 82 (No. 11.) Ein statistischer Beitrag zur Prophylaxe der geschlechtlichen Krankheiten (venereal diseases). R. Loeb.
- 83 (No. 12.) Noch ein Fall von extragenitaler Syphilis. J. S. Gouladze.
- 84 (VI, No. 1.) Ueber Urethritis petrificans und Steine der Harnröhre (stones in urethra). J. J. Karvonen. One case of each.
- 85 *Zur Behandlung von ... und Paralyse und vielleicht überhaupt (and possibly of P. Cohn).
- 86 (No. 2.) Die Circumcision in der Prophylaxe der Syphilis. H. Brettenstein.
- 87 Beitrag zur Frage der individuellen Prophylaxe der venerischen Krankheiten. Neuberger.

85. Venesection Prophylaxis of Syphilitic After-Affections.—Cohn recommends venesection periodically to remove toxins in the blood. He says the new formed blood to replace that lost will bring renewed energy to the combat with the disease.

Deutsche Med. Wochenschrift, Berlin and Leipsic.

- 88 (No. 4.) Ueber freie Receptoren von Typhus- und Dysenterie-Bazillen und über das Dysenterie-Toxin. M. Neisser and K. Shiga.
- 89 *Ueber die Untersuchung von Menschen- und Thierknochen (differentiation of bones) mittels der Wassermann'schen Differenzierungs-Methode. A. Schütze.
- 90 *The So-called Physiologic Salt Solution. F. Engelmann.—Einiges über die sogen. physiol. Kochsalzlösung.
- 91 *Cancer Tissue and Etiology. L. Feinberg.—Ueber das Gewebe und die Ursache der Krebsgeschwülste.
- 92 *Verband (bandage) der dislozirten Phalangeal-Fractur. Clamann.
- 93 Malaria-Immunität und Kindersterblichkeit (child mortality) bei den Eingeborenen (natives) in Deutsch-Ost-Afrika.
- 94 Eine neue wirksame (effective) Lampe für lichttherapeutische Zwecke (for phototherapy). H. Strebel (Munich).

89. Differentiation of Human and Animal Bones by the Biologic Test.—Schütze has found it possible to differentiate scraps of bone in forensic cases by the biologic test when all other measures had failed. It is indispensable, however, that enough albuminoid substance should still cling to the bone to induce the specific cloudiness. It is very seldom that a scrap of bone sent for examination is entirely free from some albuminoid matter.

90. **The Physiologic Salt Solution.**—Engelmann insists that the term physiologic salt solution should be exclusively reserved for the true isotonic solution, which is 9 per cent. Otherwise the term should be dropped, or used merely in a relative sense, always adding the percentage of concentration.

91. **Structure and Etiology of Cancer.**—Feinberg has been applying the methylene-blue-eosin stain to the study of the cells found in cancer, and states that it reveals a number of cells in which the nucleus is of the peculiar and exclusive type of independent unicellular living beings. It differs from the nucleus of all other cells in that it never contains nucleoles or anything suggesting a framework for the nucleus. The chromatin substance, which in other cells forms the framework, in these cells is collected in a single compact body, which he calls the "nucleus point" (Kernpunkt). This "nucleus point" is always to be found when the cell is at rest. The constant discovery in cancer tissue of numbers of these cells with the structure of independent unicellular organisms is, he thinks, an important factor in the etiology of malignant neoplasms. Of all the writers who have published communications in regard to the discovery of assumed parasites, he remarks that those of Soudakewicz, Foa, Plimmer and Sawtschenko are the only ones based on the technic of an expert. Closer study will probably show that the same object was seen by each of these observers, and that it is identical with the unicellular living animal or vegetable organism he describes.

92. **Bandage for Fractured Phalanx.**—Clamann bends the finger over a covered spool or roll of linen, and fastens it firmly in this position by a long strip of adhesive plaster passing from the back of the hand the whole length of the finger and then brought up on the back of the hand again. In order to make the plaster fit better, the ends are slit at the nail and also on the back of the hand, and slits are cut at the points of the knuckles.

Muenchener Med. Wochenschrift, Munich.

- 95 (No. 4.) *The Kidney in Scarlet Fever and Diphtheria. O. Heubner.—Bemerkungen zur Scharlach- und Diphtherieniere.
- 96 *Serum Treatment of Exophthalmic Goiter. O. Lanz.—Weiterere Mitteilung über serotherapeutische Behandlung des Morbus Basedowii.
- 97 *Ueber das Antithyreoidin. P. J. Möbius.
- 98 Atypische Myom-Operationen. H. W. Freund.
- 99 *Ueber Ionen-Wirkungen (action of ions) und ihre therapeutische Verwendung. W. Pauli.
- 100 Die Syphilitische fibröse Darm- und Magen- (intestine and stomach) Strikturen. H. Gross.
- 101 Beiträge zur Sondierung der Speiseröhre (sound for esophagus). H. Starck.
- 102 Fall von urämischer Amaurose. W. Hauenschild.
- 103 Kasuistische Beiträge zur Lehre von den Missbildungen (deformities). A. Kompe.
- 104 Fall von Graviditäts-Hemoglobinurie. Meinhold.
- 105 (No. 5.) Ueber die Begutachtung der Unterleibsbrüche (medical testimony in regard to abdominal hernias). G. Sultan.
- 106 *Operative Behandlung gewisser Lungenerkrankungen (of certain lung affections). G. Treupel.
- 107 Ueber akute cerebrale Ataxie. A. Bickel. One case.
- 108 *New Facts and New Prospects in the Domain of Nutrition. M. Ascoli.—Neue Tatsachen und neue Ausblicke in der Lehre der Ernährung.
- 109 2 seltene Masernfälle (unusual cases of measles). J. A. Grober.
- 110 *Fall von Thrombophlebitis. J. Cnopf.
- 111 Fall von Pharyngitis gangränosa, kombiniert mit Appendicitis gangränosa. W. Mayer.
- 112 Ueber die Auscultation der Mundhöhle (of the mouth). U. Baccarani.
- 113 Ueber plastische Hilfsmittel (aids) für den geburtshilfsgynäkologische (obstetric-gyn.) Unterricht (instruction). E. Winternitz.
- 114 *Screw Gag. E. Braatz.—Schrauben-Mundsperrer.
- 115 Ueber die Immunisierung des Typhus-Bacillus gegen spezifische Agglutinine. P. T. Müller.

95. **The Kidney in Scarlet Fever and Diphtheria.**—Heubner describes his examination of the kidney in two pure cases of each disease. He found that the organ was the seat of a pronounced hemorrhagic affection in scarlet fever. The glomeruli were principally involved and the epithelium secondarily. The vascular portion of the kidney was thus predominantly and primarily affected. The aspect was different in diphtheria; here there was little if any hemorrhagic tendency. The degeneration of the epithelium was primary. It occurred only in parts.

96. **Serum Treatment of Exophthalmic Goiter.**—Lanz commenced in 1894 to apply the milk of goats, after ablation

of the thyroid gland, to the treatment of Basedow's disease. He has now an experience of 6 cases, in which the patients were supplied with a thyroidectomized goat, and of 3 other cases in which the symptoms were less pronounced or other remedies were used as adjuvants. He describes the particulars of the series of 6 cases and the results attained will evidently attract attention. His Case 3 was a woman of 38, apparently in the last stage of Basedow's disease. She had to be carried into the train, was confused, stuttered, wept and sobbed instead of replying to questions, with extreme tremor of the four extremities, emaciated, skin moist over entire body, tachycardia of 140 to 160, edema of legs, extreme exophthalmus, struma very large, neck 39 cm. in circumference, apex beat abnormally strong, long suppression of menses and the typical heart symptoms of the disease. She was put on the milk of a goat thyroidectomized for the purpose and improved rapidly. In five or six weeks the heart symptoms began to subside; the menses returned later, and by the end of the year she announced herself as completely restored. A letter from her attending physician is quoted at length. He states that the tremor, excitability and other nervous symptoms have entirely subsided. The pulse has fallen from 120 or 140 to 80. The excessive thirst has disappeared and the weight has increased from 98 to 126 pounds. There is no longer any insomnia; the eyeballs have retrogressed, and the patient feels perfectly well. The struma has not diminished in size and the circumference of the neck is about the same as before. The symptoms did not recur after suspension of the milk at the end of the year. The goat which supplied the patient in Case 4 gave about one liter of milk. After five months the supply of milk failed, but the improvement obtained during the milk treatment did not subside on suspension. Her attending physician writes that the patient's weight has increased from 78 to 110 pounds, with pulse 80 when quiet. The prominence of the eyeballs is no longer noticeable. All previous treatment had been ineffectual. Case 7 was a man of 25, with a negative family history. Six weeks after he had been supplied with a thyroidectomized goat his physician writes that the improvement gained has been permanent. Lanz calls attention to the fact that it is easy to mistake the salivary glands for the thyroid in the goat, and also to overlook the isthmus glandulae thyreoidae. Other attempts at serum treatment of Basedow's disease have been made with thyroidectomized dogs. Schultes has recently reported great benefit derived from the serum of thyroidectomized sheep, Möbius' "Antithyreoidin." The patient's mind was affected and, consequently, the benefits derived could not be attributed to suggestion. His case is also interesting from the fact that the symptoms recurred on suspension of the treatment and promptly subsided again on its resumption.

97. **Antithyreoidin.**—This is the name applied to the serum of thyroidectomized sheep. Möbius has been using it in doses of 5 gm. every second day and the results have established its harmlessness and the unmistakable benefit derived. His patients had all suffered for years from benign Basedow's disease, and all were unmistakably improved. The only objection to the remedy is the high price. He longs for some millionaire patients who could afford to try a course of the serum in much larger doses, as he anticipates better results from more vigorous treatment.

99. **Therapeutic Application of the Action of Ions.**—Pauli believes that he has succeeded in establishing several laws in regard to the manifold analogies between the alterations in the condition of colloid substances with the processes that occur in living matter. He gives his reasons for assuming that the precipitating action of a salt on the albuminoid bodies is principally the result of the algebraic sum of the actions of the single ions. Also that the anions and the cations have an antagonistic action, the latter causing precipitation and the former inhibiting it. The salts can thus be grouped by their precipitating power, as he shows in a table, the fluorids of magnesium, potassium, sodium and lithium being the strongest precipitators and the bromids, iodids and rhodanids the weakest. The precipitating power increases with the

cations from magnesium to lithium, and decreases with the anions from the fluorids to the rhodanids. The fact that the rhodanids are the last link in this regular chain suggests that they may likewise possess therapeutic value like the iodids just above them. Pauli has been testing them in this respect on 35 patients with various affections, administering 1 gm. of sodium rhodanid as the maximum dose. In 10 cases of neuroses or organic nervous affections the symptoms rapidly subsided, and recurred on suspension of the drug, while they disappeared again on its resumption. The only exception was a case with pains in the epigastrium, the pathogeny of which is still obscure. In 11 cases of arteriosclerosis, the pains and oppression subsided, the exacerbations became less and less intense and the vertigo and sounds in the head completely vanished. In every case the blood pressure sank from 10 to 25 per cent. On suspension of the drug, the blood pressure rose again in three or four days to its original figure, and some of the symptoms recurred, but subsided again on its resumption. The efficacy of the rhodan compounds in such small doses is explained by their low molecular value; 1 gm. of sodium rhodanid is equivalent to 2.15 gm. of the bromid and 2.82 of the iodid. Besides the sedative and blood pressure reducing action of the rhodanid there is probably another factor in its therapeutic effect, its power to induce the formation of easily soluble combinations of protein which favor the elimination of the heavy metals to an extreme degree and is particularly useful in case of chronic lead or other poisoning. It also has a marked effect in favoring the elimination of calcium, as he shows by research on the calcium ions. In 4 cases of kidney disease the sacral pains, neuralgias and insomnia vanished as the patients took the sulfocyanid in connection with a strict milk diet, showing that, to say the least, chronic albuminuria is no contraindication to it. The effect was strikingly beneficial also in 4 cases of syphilitic headache. As a further evidence of the close analogy between the rhodanids and the iodids is the fact that the former are liable also to induce acne and coryza, as occurred, to a slight extent, in a very few instances, but subsided on suspension of the drug. The rhodanid (sulfocyanid) has no apparent influence on the thyroid gland, even after months of use. It did not cause the slightest gastric disturbances in any case. The researches of Meyers and Overtons have established the relations between the "lipoid" elements of the cell and the non-ionized narcotics, and it is probable that the ionized combinations assail the albuminoid complexes of the protoplasm. As the normal cell ions are affected or displaced, the colloid conditions become altered and with them the functional activity.

106. **Operative Treatment of Lung.**—Treupel describes another case in which notable benefit was derived from an operation in a case of gangrenous abscess of the lung in a boy of 4. An exploratory puncture revealed only a serous, sterile fluid at first, although all signs pointed to an abscess, but ten days later the symptoms indicated a pyopneumothorax and puncture this time disclosed a fetid, gaseous, purulent exudate. The abscess had evidently perforated into the pleura, and he regrets that he had not operated earlier, before this perforation occurred. The serous effusion first found was undoubtedly the reaction of the pleura to the abscess in the vicinity, and should have been the signal for intervention, even if the lesion were known to be of tubercular origin, which was not established in this case.

108. **New Outlook in the Domain of Nutrition.**—Ascoli states that it is possible to detect particles of the food in the lymph by the biologic test after feeding dogs with raw eggs or roast fowl. The entrance of these precipitable particles into the circulation induces variations in the precipitins contained in the blood, and alters the balance of the pre-existing side-chain complexes. He found the same phenomenon in man after ingestion of roast beef, and thinks that it is the key to the pathogenesis of the so-called nutritional diatheses or affections.

110. **Thrombophlebitis in Measles.**—A healthy child, about the seventh day of the exanthem of measles, developed cerebral symptoms, with death four days later. The sinus

longitudinalis was the seat of a necrotic thrombophlebitis, with extensive destruction of the surrounding parts. The kidney was also disseminated with infarcts. The case suggests that the measles process alone, without outside aid, affords a favorable soil for necrobiosis. Cnopf reviews a number of cases in the literature, in which a septic process coincided with measles, to sustain this view.

114. **Screw Gag.**—The two flat plates that form the gag are parallel and are introduced between the teeth close together. They are then separated by a screw in the handle, on the principle of a monkey wrench.

Therapie der Gegenwart, Berlin.

- 116 (January.) *Oxygen in Therapeutics. F. Kraus.—Zur Sauerstofftherapie.
- 117 *Ueber Infusions-Behandlung. W. Ercklentz.
- 118 *Ueber Chinaphenin. C. v. Noorden.
- 119 *Local Treatment of Surgically Important Infections. E. Lexer.—Ueber die örtliche Behandlung der chirurgisch wichtigen Inf.
- 120 Zur Pathologie und Therapie einiger Kniegelenkskrankheiten (knee affections). A. Hoffa.
- 121 Die Complication von Schwangerschaft (pregnancy) mit Herzfehler (cardiac defect). J. Veit.
- 122 *Die Behandlung der Syphilis mit Calomel-Injectionen. E. Lesser.
- 123 Zur Tuberkulose-Frage (question). F. Klemperer. Collective Review.
- 124 Fieber und Schüttelfröste (chills and fever) mit Leberschwellung (with enlargement of liver) geheilt durch Quecksilber (cured with mercury). G. Klemperer.
- 125 *Die Anesthesin-Behandlung des Erysipels. Henius.
- 126 Ueber Brompin-Klystiere (enemata) besonders in der Kinderpraxis (in pediatrics). A. Rahn.
- 127 *Radiography without Plates. F. Kronecker.—Eine Methode zur wesentlichen Vereinfachung und Verbilligung des Röntgen-Verfahrens.
- 128 Treatment of Consumption 133 Years Ago. S. Kaminer.—Schwindsuchts-therapie vor 133 Jahren.
- 129 (February.) Reduction of Obesity. E. H. Kisch.—Ueber den Gang der Fettabnahme bei Entfettungskuren.
- 130 Ueber die Wirkungen zweier neuen Verbindungen des Arsens und Phosphors (action of two new combinations of arsenic and phosphorus). R. Kobert.
- 131 Klinische Beobachtungen über Agurin. F. Montag.
- 132 Die Rahmgemenge und ihre neuere Ergänzung (mixtures of cream and their latest completion). Biedert and Gernsheim.
- 133 Ueber die obere Altersgrenze (highest age limit) für die Behandlung der congenitalen Hüftverrenkung (hip dislocation). G. Müller.
- 134 Zur Therapie der Gonorrhoe. W. Pick.—Die combinirte Chrom-Säure-Argentum-Therapie.
- 135 Ueber die Bekämpfung des Typhus nach R. Koch. F. Klemperer. Review.
- 136 Ueber die Schädlichkeit (injuriousness) der Bor-Säure (boric acid). C. v. Noorden.
- 137 Zur Verwendung des Wasserstoffsperoxides (hydrogen dioxide) als Verbandmittel (for dressings). E. Unger.
- 138 Kreosotal gegen Pneumonie. B. Friedemann.

110. **Oxygen in Therapeutics.**—Kraus remarks that he has experimented on himself with inhalation of oxygen, and never noticed any special subjective or objective phenomena after inhaling it for more than an hour at a time. The pulse was unaffected, but the respiration was a little deeper. He experimented with it both at rest and during physical exercise, but could not detect any variance from ordinary conditions either in himself or in a number of anemic and diabetic subjects. On account of the negative results, he has never published an account of these quite extensive researches. The freezing-point of the blood was not altered in healthy persons, even after prolonged inhalation of oxygen. The proportion of chlorin remained approximately the same. In one patient with croupous pneumonia and extreme cyanosis, the chlorin was in the proportion of .635 per cent. before and .63 per cent. after prolonged inhalation of oxygen. The pulse and diuresis were not affected, but the patient stated that she felt "relieved." The process of oxidation in the organism is probably complex and requires oxidases as well as the oxygen itself. Inhalation of it does not relieve the death agony. Kraus has seen scarcely any but bad results follow its use in pneumonia, and it is generally useless in tuberculosis. In cardiac insufficiency and dilatation, it usually affords subjective relief, but the cyanosis never actually vanished in his experience. In the coma of morphin intoxication much better results were obtained from tracheotomy and artificial respiration for twenty to thirty-six hours. Oxygen never induced the slightest appreciable benefit in anemia nor in leukemia, diabetes and other constitutional diseases. The principal indication for its use is stenosis of the air passages. When only

a small quantity of air can reach the alveoles, it is rational to supply the air in as concentrated a form as possible. Oxygen is also useful in carbon oxid intoxication. In urgent cases intravenous injection may be preferable to inhalation.

117. Infusion in Therapeutics.—Ereklentz found that animals treated by infusion after otherwise fatal intoxication survived, and their organs showed little trace of the intoxication to which the control animals all succumbed with severe alterations in their organs. The best results, strange to say, were obtained, not from the true isotonic 9 per cent. salt solution, but with the 6 per cent. The benefit was most apparent the nearer the infusion approached to being continuous. In some of the tests the poison used entered so rapidly and firmly into combination with the nerve cells that the infusion was too late to affect it. The diuresis invariably induced did not eliminate any of the poison in these cases. The results of infusion after experimental injections of anilines and potassium chlorate harmonize with what is observed in the clinic, especially in respect to severe anemia, which is now regarded as a toxic affection, in septic affections and in uremia. Septic conditions are benefited to a remarkable extent by infusion. In a case of malignant endocarditis, for example, with extremely painful joint metastases, the swelling and pains in the joints vanished as if by magic after the infusion. A patient with puerperal sepsis was roused from her stupor, and another was undoubtedly saved by the systematic continuous use of infusion. Its efficacy in uremia is well known. Improvement and sometimes recovery followed the copious diuresis induced, but the specific gravity of the urine frequently remained high, and even rose higher with the increasing amount of urine. The results were always highly satisfactory in severe anemia. In one case the hemoglobin rose from 20 to 85 per cent. and the reds from 368,000 to 4,800,000. The morphologic alterations in the blood retrogressed, and the slight temperature subsided. So long as severe symptoms persist, one or two liters should be injected subcutaneously once to several times a day. When exceptionally prompt action is desired the intravenous route may be preferable, preceded, perhaps, by venesection. He concludes by advising the use exclusively of the .9 or .92 per cent. solution as the only isotonic one.

118. Chinaphenin.—This combination of quinin and phenacetin has been tried by Von Noorden during the last two years in a number of affections, including whooping cough, typhoid fever, pneumonia, neuralgias, etc. It apparently possesses the virtues of each of its ingredients, while their drawbacks are neutralized. It was always well tolerated.

119. Surgical Infections.—Lexer reviews his experience at Von Bergmann's clinic, and separates the lesions in question into three groups. The first includes snake bites, etc. Absorption of the poison is best averted by constriction above on the limb and excising the wounded part, always using the knife, never the thermocautery. The second group includes anthrax and similar septic processes. Incisions, application of disinfectants and even movements of the muscles of the part may irritate the inflamed tissues and lead to absorption of the germs which otherwise may remain localized. It is sufficient to cover the lesion with a thick layer of salve on a rag and immobilize the part, in a sling, for instance, if the arm be involved. Any one who has seen a facial thrombophlebitis and fatal meningitis develop from a furuncle on the lip which had been pricked and squeezed and otherwise maltreated, will appreciate the benefits of cautious, conservative treatment. The smallest boil may be the source of the severest suppurative osteomyelitis. After opening such a lesion the cavity should be drained and a dry tampon loosely applied. The dry tampon sucks up the secretions and prevents their reabsorption from the wound. The cautery scab has the opposite effect and should be strictly avoided. In incising a large plegmon necrosis is necessary and a constricting bandage around the part. In case of inflammation of a finger, the constriction should be applied at the root and cocaine injected into sound tissue, which should always be the rule, never into already inflamed tissue. Small abscesses, etc., are best incised under

ethyl chlorid anesthesia. Moist dressings should be rejected except, possibly, for the very mildest affections. Suppuration is more liable and more rapid with than without them, and once established they promote its continuance. Panaritium in the bone is frequently induced by them and poultices are liable to entail extensive necrosis. Suppuration is injurious, as it destroys the tissues. In his third group, the surgeon has long abandoned the hope of destroying the germs in a tetanus wound, bite of a mad dog, or in glanders, by disinfectants. Foreign bodies should be removed from the wound which should be incised freely and kept open under aseptic treatment. This will remove a certain portion of the germs. Excision is better than cauterization for small wounds, but in case of extensive lesions, much soiled, the only treatment is immediate amputation if symptoms of tetanus develop during the first week and they prove violent, even when serum treatment has been promptly applied. In case of a mad dog bite, excision into sound tissue is considered sufficient. In both cases the excision must be smooth and kept open. The conditions are the least promising in acute glanders. Amputation, to be successful, must be done before the lymphatics are involved, and this can occur only in exceptional cases. The abscesses must be incised and every mechanical irritation scrupulously avoided. Curetting the focus has transformed many a mild chronic case into an acute and fatal one.

122. Calomel Injections in Syphilis.—Lesser has observed a number of cases and remarks that injections of calomel are liable to cause symptoms of severe intoxication and disagreeable by-effects. They should be reserved for exceptional cases, but are very useful when absolutely indicated.

125. Anesthesia in Erysipelas.—Henius states that 25 cases of erysipelas have been treated at Von Noorden's clinic with a 10 per cent. lanolin-vaselin salve of anesthesin, with the result of complete abolition of all pain. No intolerance or by-effects were observed in any case. He adds that he used the anesthesin in two cases of gastric crises in tabes, by intradural injection of a 3 per cent. oil solution, as in spinal cocainization. There was not the slightest anesthesia from it, which confirms Von Noorden's assertion that anesthesin acts only on the nerve terminals and does not affect the nerve trunks.

127. Radiography Without Plates.—Kronecker gives some fine radiographs, which were obtained by the use of sensitized silver bromid paper in place of plates. The exposure has to be three or four times as long as when a plate is used, and the exposed parts of the paper must become a shiny black before the picture is complete. But, once taken, the advantages of having the paper instead of a plate are obvious. The radiogram can be taken and completely finished in an hour or so. Another advantage of the paper is that as large an area can be photographed as desired. By combining two of the large sheets it might be possible to take the entire skeleton of an adult at once.

Hospitalstidende, Copenhagen.

- 139 (Nos. 49-50.) *Tapeworm in Children. N. Schiödt.—Baendelorm i Barnealderen.
- 140 Medical Practice in Greenland. A. Bertelsen.—Bidrag til Belysning af Laegevaesnets Ordning i Groenland.
- 141 (No. 51.) *Three Gastric Affections Treated Operatively. F. Guldberg.—Tre Ventrikellidelser, behandlede operativt.
- 142 Polyneuritis alcoholica. K. Faber. One case.
- 143 (Nos. 52-53.) Blood-Vessel Endothelioma in Uterus. P. N. Hansen.—Blodkarendotheliom i Uterus.
- 144 *2 Tilfaelde af puerperal Sepsis, behandlede efter Fochler. L. M. Hoff.
- 145 Bemaerkninger om Opfoerelse af Sanatoriebygninger for Tuberculose. N. Filndt.
- 146 (XLVI, 1.) Om Behandling af Lungen-Tuberkulose paa Provins-Sygehuse. C. A. Larsen.
- 147 (Nos. 2-3.) *Transfusion ved Betaendelser i Peritoneum (in peritonitis). L. Kraft.

139. Tapeworm in Children.—Among the 9,000 children admitted to the Luise Hospital at Copenhagen during the last twenty-four years, 43 had tapeworm. The *Tenia medio-canellata* was found in 37, the solium in 2, and the cucumerina, flavopunctata and the bothriocephalus latus once each. In the above cases 11 were recurrences. Schiödt also adds another series from another hospital, which brings the number to 65 cases, all the patients under 14. The particulars are given

in tabulated form. The exact age was mentioned in 48 cases: It was less than 1 year in 1; between 2 and 3 in 3; between 3 and 4 in 5; between 4 and 5 in 7. The sexes were nearly equally represented. The treatment was not invariably successful. Out of 40 with *T. m.*, only 26 were completely cured. The best results were obtained with rhizoma filicis. One child required five courses before the complete expulsion of the parasite, another four courses, and three, two. Several had had treatment before; the total number of courses was eight in one instance. In one of the unsuccessful cases the child returned for treatment eight years later, proving that the parasite had continued to live for this length of time. The longest tapeworm was expelled from a boy of 13; it measured 14 yards. Another, in a child of 15 months, measured 8 yards. In one case 6 yards were expelled, and two months later 10 yards with the scolex. From this and other cases, he computes the growth of the worm as 10 cm. a day. The appetite in the children was ravenous or defective, or alternating periodically. The general health suffered much from the presence of the parasite and also from the courses of treatment. Some children were much emaciated, and others showed a deficient growth for their age. Nearly all the little patients exhibited pallor of skin and mucosae, with slight anemia, possibly due to the toxins secreted by the parasite. He mentions that if the after-purge is given too soon, the children are liable to vomit it. He thinks that two or three hours should elapse. His monograph is a very complete study of the subject from all points of view.

141. **Three Gastric Affections.**—One of Guldberg's cases was an hour-glass stomach and gastropexy, treated by a plastic operation and gastropexy. The second was similar, and was treated in the same way, but required later a gastro-enterostomy with Murphy button and subsequent enteroanastomosis. The button did not pass away, and required removal by a laparotomy thirteen months later. The third patient was treated by gastroenterostomy on account of an ulcer. All the patients were completely cured of their troubles.

144. **Treatment of Puerperal Fever with Artificial Abscesses.**—In the 2 severe cases of septic puerperal fever described, the patients rapidly recovered after the application of turpentine abscesses made according to Fochier's directions.

147. **Transfusion in Peritonitis.**—Kraft has been making an extensive experimental study of the effect of transfusion, that is, intravenous injection of normal saline solution, in artificially induced inflammation of the peritoneum and in health. He describes typical examples out of his experience with about a hundred rabbits. No effect from the transfusion was observed in regard to the absorption or transudation of the peritoneum in health, but it induced transudation whenever the heart or kidneys were insufficient. In case of incipient peritoneal septicemia, absorption by the peritoneum was promoted by the transfusion. It also increased the exudation in case of peritonitis with effusion from any cause. Transfusion is, therefore, indicated in cases of diffuse peritonitis with exudation, as a preliminary to operation, as the exudation is increased and absorption diminished. On the other hand, it is contraindicated in case of circumscribed or migrating peritonitis, as the increased exudation may loosen or detach the adhesions, and thus transform a circumscribed into a diffuse affection. But after an operation, in these cases, when ample outlet has been provided for the secretions and the still sound portion of the peritoneum is protected, transfusion may be useful. It must be cautiously applied, however, as the system would suffer if the resulting exudation were to entail too severe a loss of serum and albumin.

Hygiea, Stockholm.

- 148 (No. 11.) *Impressions in Regard to Treatment of Scoliosis. P. Haglund.—Om skoliosbehandling.
149 *Insanity Among Women Teachers in Sweden. H. Lundborg.—Om skett hos lärarinnor jämte en kort öfverblick öfver psykiatriska sjukhusen i Sverige.
150 Fall of a young lady after resorption of alderstarr (senile cataract). C. Lincabli.
151 Om kataton. F. Srenson.
152 (No. 12.) Rubemann's Test for Uric Acid. A. Blomquist.—En ny metod för kvantitativ bestämning af urinsyra.

153 Cesarean Section Under Compression of the Aorta. K. Dahlgren.—Kejsarsnitt under aortakompression.

148. **Treatment of Scoliosis.**—Haglund has been traveling in Europe and studying methods of treating scoliosis. The results of the best are far from satisfactory, he thinks, and do not repay the time and efforts. He urges that more attention should be devoted to prevention.

149. **Insanity Among Teachers.**—Lundborg found that 17, or 8 per cent., of the 216 unmarried female insane inmates of the Upsala asylum had been teachers in small schools or private families. He proposes various reforms in the management of the school system to counteract this tendency.

Gazzetta degli Ospedali, Milan.

- 154 (No. 147.) Alterazioni della sensibilità tattile, termica e dolorifica in seguito (consecutive to) lesione del nervo ulnare. A. Veneziani.
155 Bactericidal Action of X-Rays. Cippolina and V. Maragliano. Sull'azione batt. dei raggi X.
156 Two Cases of Pulmonary Tuberculosis Recovered Under Serum Treatment. C. Romeo.—Tub. della pleura e del polmone, etc.
157 (No. 150.) La modificazione istologica degli organi nel corso dell'immunità sperimentale. G. Guerrini.
158 Contributo all'eziologia delle peritoniti ipercute. W. Zanini.
159 Contributo all'epidemiologia della malaria. G. Perrod.
160 Delle temperatura rettale nel tetano sperimentale. A. Kleefeld and J. Pinchart.
161 Contributo allo studio dell' incompatibilità terapeutica del miscuglio calomelano-antipirina in confronto col calomelano-piramidons. F. Ubertis.
162 (XXIV, 2.) Contenuto in Azote delle principali derrate alimentari degli Ospedali Civili di Genova (nitrogenous elements in hospital rations). G. Zanoni.
163 Su di una epidemia familiare da diplococco di Fraenkel. C. Baduel and C. Gargano.
164 Sul trattamento chirurgico delle affezioni non-cancerose dello stomaco. G. Maresco. One case.
165 L'atropina nell' oculistica occlusione intestinale. U. Fabris. One successful case.
166 Emorragia capsulare destra. E. De Renzi. One case. Cured by electricity.
167 (No. 5.) *Sul riflesso polmonare. A. Plessi.
168 Sulla pneumonite lobare acuta nei bambini (in children), a dolore ectopico appendicolare. O. Cozzolino.
169 Le anilina nella chimica clinica. C. Bernabei.
170 2 suture del ventricolo sinistro per ferite da punta e taglio (sutured stab wounds of left ventricle). Two cases; one recovery. E. Giordani.
171 Valore dell'esame chimico del succo gastrico (chemical tests of gastric juice) nella diagnosi delle dispepsie. G. Campanella.
172 Ancora dell' euschinino nell' infezione palustre. M. Capurbano.
173 La faradizzazione nell' occlusione intestinale. G. Fratti. One successful case.
174 Caso di ossurasi cutanea. P. Barbagnallo.
175 *Caso di avvelenamento da sublimato corrosivo. A. Bormans.

167. **Lung Reflex.**—Plessi examined eight patients in regard to the lung reflex described by Adams, after spraying the skin over the lung with ether. He did not find the change in the outline of the lung so marked as Adams claimed. It was never more than 1 or 2 cm., and it is due, he believes, to the contraction of the diaphragm and muscles of the thorax under the influence of the spray.

175. **Recovery from Severe Sublimite Poisoning.**—A girl of 20 took three sublimite tablets of a gram each with suicidal intent. Her friends gave her hot drinks, which helped to dissolve the sublimite, but she vomited one tablet almost entire. None of the drug was found in the stomach when the physician washed it out. He administered white of egg. There was absolute anuria for five days and acute anemia from the severe losses of blood from the necrotic stomatitis, but recovery was rapid and complete.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY FOR 1903. A Yearly Digest of Scientific Progress and Authoritative Opinions in all branches of Medicine and Surgery. Drawn from Journals, Monographs, and Text-Books of the Leading American and Foreign Authors and Investigators. Arranged, with Critical Editorial Comments, by Eminent American Specialists, Under the Editorial Charge of George M. Gould, A.M., M.D. Volume II, General Surgery. Cloth. Price, \$3.00 net. Pp. 670. Fully Illustrated. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

CLINICAL TREATISES ON THE PATHOLOGY AND THERAPY OF DISORDERS OF METABOLISM AND NUTRITION. By Prof. Dr. Carl von Noor-

den, Physician-in-Chief to the City Hospital, Frankfort a. M. Authorized American Edition, Translated Under the Direction of Boardman Reed, M.D., Professor of Diseases of the Gastrointestinal Tract, Hygiene and Climatology, Department of Medicine, Temple College, Philadelphia. Part I. Obesity. The Indications for Reduction Cures. Cloth. Pp. 59. Price, \$0.50. Part II. Nephritis. Price, \$1.00. New York: E. B. Trent & Co. 1903.

A MANUAL OF TOXICOLOGY. A Concise Presentation of the Principal Facts Relating to Poisons, with Detailed Directions for the Treatment of Poisoning; Also a Table of Doses of the Principal and Many New Remedies. By Albert H. Brundage, A.M., M.D., Phar. D., Professor of Toxicology, Physiology and Hygiene in the Brooklyn College of Pharmacy. Second Edition, Revised and Enlarged. Cloth. Pp. 374. Price, \$2.00 net. New York: The Henry Harrison Co. London: Bailliere, Tindall and Cox. 1902.

THE PRACTICAL TREATMENT OF STAMMERING AND STUTTERING, with Suggestions for Practice and Helpful Exercises. By George A. Lewis, Originator of the Lewis Phonometric Method. And a Treatise on the Cultivation of the Voice, with a Discussion of Principles and Suggestions for Practice. By George B. Hynson, M.A., Late Principal of the National School of Elocution and Oratory. Illustrated. Cloth. Pp. 415. Price, \$3.50. Detroit: George Andrew Lewis. 1902.

PROCEEDINGS OF THE SEVENTEENTH ANNUAL MEETING OF THE CONFERENCE OF STATE AND PROVINCIAL BOARDS OF HEALTH OF NORTH AMERICA. New Haven, October 28 and 29, 1902. Paper. Pp. 192. Providence: Snow and Farnham. 1902.

TWENTY-SEVENTH ANNUAL REPORT OF THE MANAGERS AND OFFICERS OF THE NEW JERSEY STATE HOSPITAL at Morris Plains, for the Year Ending October 31, 1902. Paper. Pp. 116. Trenton, N. J.: John L. Murphy Publishing Co. 1902.

PHYSIOLOGY AT HARVARD. By William Townsend Porter, M.D., Associate Professor of Physiology in the Harvard Medical School. Second Edition. Paper. Pp. 101. Cambridge, Mass.: The University Press. 1903.

A MANUAL OF DENTAL METALLURGY. By Ernest A. Smith, Associate of the Royal School of Mines, London. Second Edition. Cloth. Pp. 294. Price, \$2.00 net. Philadelphia: P. Blakiston's Son & Co. 1903.

THIRTEENTH ANNUAL REPORT OF THE ST. MARY'S HOSPITAL, Rochester, Minn., for the Year 1902, Conducted by Sisters of St. Francis. Paper. Pp. 32. Rochester, Minn.: Daily Bulletin Print. 1903.

TWENTY-NINTH ANNUAL REPORT OF THE SUPERINTENDENT OF THE CINCINNATI SANITARIUM for the Year Ending Nov. 30, 1902. Paper. Pp. 17. Cincinnati: The Robert Clarke Co.

REPORT OF THE BOARD OF MANAGERS OF THE NEW JERSEY SANATORIUM FOR TUBERCULOUS DISEASES, 1902. Paper. Pp. 10. Camden, N. J.: Sinnickson Chew & Sons Co. 1902.

THERAPEUTICS OF INFANCY AND CHILDHOOD. By A. Jacobi, M.D., LL.D. Third Edition. Cloth. Pp. 559. Price, \$3.50. Philadelphia and London: J. B. Lippincott Co. 1903.

ANNUAL REPORT OF THE NORTHEASTERN DISPENSARY, Baltimore, Md. Paper. Pp. 12.

The Public Service.

Navy Changes.

Changes in the Medical Corps of the Navy, for the week ending Feb. 21, 1903:

Medical Director J. A. Hawke, retired, detached from Naval Hospital, Mare Island, Cal., and ordered home.

Medical Inspector M. H. Simons, ordered to Washington, February 24, for examination for promotion, and thence to Naval Hospital, Mare Island, Cal.

Surgeon H. B. Flitts, detached from the Naval Hospital, Sitka, Alaska, and ordered to the *Pensacola*.

A. A. Surgeon H. T. Nelson, Jr., ordered to the Marine Barracks, Sitka, Alaska.

Medical Inspector D. N. Bertollette, detached from the *New York*, and from duty as fleet surgeon of the Pacific Station, and ordered home to wait orders.

Surgeon D. O. Lewis, detached from the *Pensacola* and ordered to the *New York* for duty as fleet surgeon of the Pacific Station.

A. A. Surgeon G. C. Grieve, ordered to the Navy Yard, Boston.

A. A. Surgeon J. R. Dykes, ordered to the *Franklin*.

A. A. Surgeon V. Dabney, ordered to the *Pensacola*.

A. A. Surgeon T. C. Blackburn, ordered to the *Culgoa*.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Feb. 19, 1903:

Surgeon P. C. Kalloch, to proceed to Augusta, Me., for special temporary duty.

Surgeon S. D. Brooks, to assume temporary command of the Portland, Me., quarantine station during the absence of Surgeon P. C. Kalloch.

Asst.-Surgeon Edward Francis, relieved from duty in the Hygienic Laboratory, and directed to proceed to Mexico and Durango, Mexico, for special temporary duty.

Asst.-Surgeon W. K. Ward, granted leave of absence for four days from Feb. 13, 1903, under Paragraph 191 of the regulations.

A. A. Surgeon J. T. Bullard, granted leave of absence for 30 days from February 13.

Pharmacist E. M. Holt, to proceed to Louisville, Ky., and report to P. A. Surgeon G. B. Young, chairman of board of examiners, to determine his fitness for promotion to the grade of pharmacist of the second class.

Pharmacist G. A. Morris, granted leave of absence for seven days from Feb. 11, 1903, under Paragraph 210 of the regulations.

PROMOTION.

P. A. Surgeon G. M. Guiteras, commissioned as surgeon to rank as such from Dec. 13, 1902.

BOARD CONVENED.

Board convened at the marine hospital, Louisville, Ky., for the purpose of examining Pharmacist E. M. Holt, to determine his fitness for promotion to the grade of pharmacist of the second class. Detail for the Board: P. A. Surgeon G. B. Young, chairman; Asst.-Surgeon T. D. Berry, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Feb. 20, 1903:

SMALLPOX—UNITED STATES.

California: Fresno, Jan. 1-31, 15 cases; Los Angeles, Jan. 31-Feb. 7, 2 cases; Sacramento, Jan. 31-Feb. 7, 1 case; San Francisco, Jan. 24-Feb. 8, 13 cases.

Colorado: Jan. 31-Feb. 7, Colorado Springs, 1 case; Denver, 8 cases.

Illinois: Belleville, Jan. 31-Feb. 7, 1 case; Galesburg, Jan. 31-Feb. 14, 7 cases.

Indiana: Elwood, Feb. 8-15, 3 cases; Evansville, Jan. 31-Feb. 14, 9 cases, 1 death; Indianapolis, Jan. 31-Feb. 14, 121 cases, 24 deaths; South Bend, Jan. 31-Feb. 7, 1 case.

Iowa: Davenport, Jan. 31-Feb. 14, 12 cases; Ottumwa, Jan. 31-Feb. 14, 1 case.

Kentucky: Lexington, Jan. 31-Feb. 14, 4 cases; Newport, Jan. 31-Feb. 14, 2 cases.

Louisiana: New Orleans, Jan. 31-Feb. 12, 3 cases, 2 imported.

Maine: Biddeford, Feb. 7-14, 12 cases; Eastport, Feb. 7-10, 13 cases; Portland, Jan. 31-Feb. 7, 1 case.

Maryland: Baltimore, Feb. 7-14, 1 case.

Massachusetts: Boston, Feb. 7-14, 4 cases, 2 deaths; Haverhill, Feb. 7-14, 1 case; Lynn, Jan. 31-Feb. 7, 1 case.

Michigan: Detroit, Feb. 7-14, 38 cases, 1 death; Flint, Jan. 31-Feb. 14, 4 cases; Grand Rapids, Feb. 7-14, 10 cases; Port Huron, Feb. 7-14, 12 cases.

Nebraska: Omaha, Jan. 31-Feb. 7, 7 cases.

New Hampshire: Manchester, Jan. 31-Feb. 7, 10 cases.

New Jersey: Camden, Feb. 7-14, 1 case; Jersey City, Feb. 8-15, 3 cases, 1 death; Newark, Feb. 7-14, 1 case; Plainfield, Feb. 7-14, 1 case, imported.

New York: New York, Feb. 7-14, 3 cases.

Ohio: Chillicothe, Jan. 24-31, 8 cases; Feb. 7-14, 3 cases; Cincinnati, Feb. 6-13, 7 cases; Cleveland, Jan. 31-Feb. 14, 16 cases, 4 deaths; Dayton, Feb. 7-14, 1 death; Hamilton, Jan. 31-Feb. 14, 2 cases; Toledo, Jan. 31-Feb. 14, 15 cases, 1 death.

Pennsylvania: Butler, Jan. 17-Feb. 7, 2 cases; Erie, Jan. 31-Feb. 7, 4 cases; Johnstown, Jan. 31-Feb. 14, 5 cases, 3 cases imported; Philadelphia, Feb. 7-14, 30 cases, 2 deaths; Pittsburg, Jan. 31-Feb. 7, 18 cases, 3 deaths; York, Jan. 1-31, 1 case.

South Carolina: Charleston, Jan. 31-Feb. 7, 14 cases, 1 death.

Utah: Ogden, Jan. 1-31, 17 cases; Salt Lake City, Jan. 31-Feb. 7, 21 cases.

Wisconsin: Milwaukee, Jan. 31-Feb. 14, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, Jan. 17-24, 7 cases.

Barbados: Jan. 16-30, 8 cases.

Belgium: Jan. 17-24, Antwerp, 4 cases, 2 deaths; Brussels, 1 death.

Canada: Amherstburg, Jan. 24-31, 1 case; Winnipeg, Jan. 31-Feb. 7, 1 case.

Canary Islands: Las Palmas, Jan. 17-24, 33 cases, 2 deaths.

Colombia: Cartagena, Jan. 26-Feb. 1, 1 death.

Ecuador: Guayaquil, Jan. 24-31, 1 death.

France: Rheims, Jan. 18-24, 1 case.

Germany: Hamburg, Jan. 24-31, 1 case; Leipzig, Jan. 17-24, 1 death.

Great Britain: Dublin, Jan. 17-31, 1 case, 1 death; Leeds, Jan. 24-31, 4 cases; London, Jan. 24-31, 6 cases; Manchester, Jan. 17-31, 27 cases, 1 death; Nottingham, Jan. 17-31, 14 cases.

India: Bombay, Jan. 6-20, 61 cases; Calcutta, Dec. 13-Jan. 17, 2 cases; Madras, Dec. 20-26, 2 deaths.

Italy: Palermo, Jan. 10-31, 15 cases, 5 deaths.

Mexico: City of Mexico, Jan. 26-Feb. 1, 4 cases, 4 deaths.

Russia: Moscow, Jan. 10-24, 7 cases, 4 deaths; Odessa, Jan. 17-24, 2 cases; St. Petersburg, Jan. 10-24, 71 cases, 21 deaths.

Straits Settlements: Singapore, Dec. 27-Jan. 3, 3 deaths.

Turkey: Constantinople, Jan. 18-25, 1 death.

SMALLPOX—INSULAR.

Philippines: Manila, Dec. 13-27, 2 cases.

YELLOW FEVER.

Colombia: Panama, Jan. 26-Feb. 9, 5 cases, 2 deaths.

Ecuador: Guayaquil, Jan. 17-24, 20 deaths.

Mexico: Vera Cruz, Jan. 31-Feb. 7, 2 cases, 2 deaths.

CHOLERA—INSULAR.

Philippines: Manila, Dec. 13-27, 16 cases, 10 deaths; Provincas, Dec. 13-27, 1,130 cases, 813 deaths.

CHOLERA—FOREIGN.

India: Bombay, Jan. 9-20, 1 death; Calcutta, Dec. 13, 152 deaths.

PLAGUE—INSULAR.

Hawaii: Honolulu, Feb. 5, 1 death.

Philippines: Manila, Dec. 13-27, 1 death.

PLAGUE—FOREIGN.

India: Bombay, Jan. 6-20, 818 deaths; Calcutta, Dec. 13-Jan. 17, 85 deaths; Karachi, Dec. 28-Jan. 11, 53 cases, 52 deaths; Madras, Dec. 20-26, 1 death.

Mexico: Mazatlan, Feb. 4-12, 11 new cases, 23 deaths.

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No. 11.

Original Articles.

BACTERIOLOGIC EXAMINATION OF THE BLOOD DURING LIFE IN SCARLET FEVER WITH SPECIAL REFER- ENCE TO STREPTO- COCCEMIA.

FROM THE MEMORIAL INSTITUTE FOR INFECTIOUS DISEASES.
LUDVIG HEKTOEN, M.D.
CHICAGO.

In this article are presented the results of a bacteriologic examination of the blood during life of cases of scarlet fever with especial reference to general streptococcus infection in this disease.

FREQUENCY OF STREPTOCOCCI IN FATAL SCARLATINA.

Streptococci have played a prominent part in the bacteriology of scarlet fever since the earliest application of bacteriologic methods to its study. Their importance has grown as the observations have multiplied, and many now regard streptococci as an essential factor in the scarlatinal process. Among the earlier observations concerning general streptococcus infections in scarlet fever are those of Crooke, Löffler, Friedländer, Fränkel and Freudenberg, Heubner and Bardt, Lenhartz and others, who found virulent streptococci in the internal organs and sometimes in the joints of victims of this disease. All these investigators appear to have regarded the streptococcus infection as entirely secondary in its character, the principal point of entrance being the throat.¹

Babes² found streptococci in the internal organs of seventeen fatal cases of scarlatina. In fourteen instances of scarlatinal nephritis streptococci were present in the kidney in pure culture. In various articles Babes has suggested that streptococci are the cause of scarlatina. His material certainly justifies the conclusion that streptococci of varying virulence cause the larger part of the secondary infections in scarlet fever.

Streptococci have been found, in a large proportion of the cases examined, in the urine of scarlet fever patients by Courtois,³ Lewis and others, and more frequently in albuminous than in non-albuminous urines.

Marie Raskin⁴ made very extensive studies in the bacteriology of scarlet fever and its complications. She failed to find streptococci in the blood of 64 cases, but isolated it four times from the skin in 20 cases. But in 31 cases with serious complications of various kinds she found streptococci present in the pus, generally in the internal organs, occasionally in the blood. In two cases of scarlatina fulminans without complications streptococci were found in the blood. The streptococcus she found formed long twisted chains in bouillon which re-

mained clear except for some sediment, and she regarded it as a form of *Streptococcus pyogenes* and as the most important cause of the complications of scarlet fever. In another article⁵ she speaks of a micrococcus of irregular form and size, growing like streptococcus in gelatin and agar, and found in the blood and organs during the first four days of the disease. In the blood the organism was found within the leucocytes in diplococcus form, one coccus being larger than the other. Unfortunately the available abstract is too fragmentary to justify any conclusions as to the real nature and significance of the coccus.

R. M. Pearce⁶ records the results of the examinations of 23 fatal cases of scarlet fever. "Of the 11 cases in which there was a general infection, the streptococcus was found in 9. In 6 of these it occurred alone, and in 3 associated with the *Staphylococcus pyogenes aureus*. Infection with the *Staphylococcus pyogenes aureus* alone occurred in one case, and with the pneumococcus alone in one case." *Streptococcus pyogenes* was found also to be the most frequent cause of the secondary inflammatory lesions in this series. Pearce regards the streptococcus infections, local as well as general, in scarlet fever as secondary in their nature, and he considers the streptococcus found in his series as identical with *Streptococcus pyogenes*.

Wright,⁷ in 11 fatal cases, notes a general streptococcus infection in 4. Baginsky and Sommerfeld⁸ found streptococci in the heart's blood and internal organs in every one of 82 fatal cases of scarlet fever, including several in which death occurred early and in which gross secondary lesions had not developed. They were unable to differentiate the streptococci isolated from ordinary pathogenic streptococci. A high degree of virulence for rabbits could be created readily by repeated passages through this animal. The serum of convalescents from scarlet fever had no demonstrable agglutinating effect on streptococci from the victims of the disease; nor did the serum of convalescents have any definite protective action in rabbits injected with such streptococci. In other words, the organism did not appear to possess any specific properties of any kind, demonstrable by these methods. Nevertheless, Baginsky and Sommerfeld contend that this streptococcus plays a specific rôle in scarlet fever and that all the phenomena of the disease are explainable by the distribution of the cocci in the tissues and by intoxication with their products. While scarlet fever never transfers erysipelas or sepsis, but only scarlatina, yet streptococci are constant in scarlatinal angina; they cause a general infection in all fatal cases of scarlatina, even the uncomplicated, and they have been found in the blood of scarlatinal patients during life. This seems to be the line of reasoning that leads to the conclusion that scarlet fever is a streptococcus disease.

Slawy's⁹ observations are interesting. Of 98 fatal cases of scarlet fever 52 (52.6 per cent.) yielded bacteria on examination of the blood after death. Streptococci were found 39 times, streptococci and staphylococci 6 times, staphylococci 3 times and pneumococci 4 times. He examined the blood during life in 72 cases with positive results in 7, streptococci being found 4 times and staphylococci 3 times. These 7 children died and in all the same bacteria were found after death. In these cases the blood was taken from the lobe of the ear and the small amount of blood thus obtainable may have reduced somewhat the number of positive cases. Slawy regards the streptococcus invasion as secondary because of its absence in a goodly number of cases even after death; because in 82 per cent. of the cases in which it was found there existed grave ulcerative complications through which invasion readily could take place; and because streptococci were absent in those cases that died in the first three days of the disease. Present on the tonsils of healthy children he believes the oropharyngeal cavity to be the common point of entrance for streptococci in scarlet fever, the virus of which either increases their virulence or decreases the resistance of the tonsillar tissue. In measles and diphtheria he found streptococci in the blood in 22 and 20 per cent. of the fatal cases respectively.

Based on the negative result of a careful bacteriologic examination of the internal organs of a child that died 48 hours after the onset of scarlatina, Böhm¹⁰ categorically denies all etiologic relationship between scarlet fever and streptococci.

Gordon¹¹ isolated a streptococcus from 10 fatal cases. The claim that this streptococcus is distinct and that it merits the designation "*Streptococcus scarlatinae*" as yet seems to rest on rather slender basis. And Moser¹² isolated streptococci from the heart's blood in 63 of 90 cases of scarlet fever.

The foregoing summary shows the great frequency of streptococcus infection in fatal cases of scarlatina. It certainly lies near at hand to conclude that scarlet fever without streptococcus invasion would lose half its terrors even if one is not willing to accept the view that scarlatina is a streptococcus disease, caused by a specific streptococcus, a contention that is without definite proof though some facts may be adduced in its favor. Under these circumstances it would seem desirable to learn more about the presence or absence of streptococci in the blood of non-fatal, mild as well as severe, complicated as well as uncomplicated, cases of scarlatina. Comparatively little work has been done on this phase of the problem, and that is mostly of a rather fragmentary character.

BACTERIOLOGIC STUDIES OF SCARLATINAL BLOOD DURING LIFE.

Lemoine¹³ found the streptococcus in the blood during life in 2 of 39 cases. Klein¹⁴ was one of the first to describe cocci as the cause of scarlet fever. For years he has upheld as this cause *Streptococcus scarlatinae* or *Streptococcus conglomeratus*, which, so he claims, was described by himself and Kurth.* Klein claims, further, that this organism does not occur in healthy persons or such as have angina not scarlatinal. He isolated it from

the blood of 4 cases of 11 scarlet fever between the third and sixth day.

D'Espine and Marignac isolated from the blood of the finger of a scarlet fever patient a streptococcus. The case being typical and without complications in the usual sense, d'Espine¹⁵ claims that the streptococcus was the cause of the scarlet fever.

Mery¹⁶ isolated from the blood of a scarlet fever patient a streptococcus that proved refractory to Marmorek's antistreptococcus serum.

Seitz¹⁷ examined the blood bacteriologically in the early stages of 12 cases of scarlatina, using about 1 c.c. of blood on various media. Streptococci developed in the cultures from one case that subsequently proved fatal. He also found streptococci in the internal organs of two fatal cases.

Reference has been made to the fact that Slawy made cultures of the blood in 72 cases, the blood being obtained by puncture of the lobe of the ear; of the 7 positive results 4 concerned streptococci and 3 staphylococci. All of the 7 cases died and the same organisms were recovered from the internal organs after death.

Hlava¹⁸ has described recently a streptococcus that he finds with special frequency in the acute eruptive diseases. In many respects this streptococcus resembles the ordinary pathogenic streptococci, especially *Streptococcus conglomeratus*, but Hlava claims for it the individual peculiarity of forming crumbling masses in certain media containing saccharose (Zopf's bouillon, saccharose-agar), the masses consisting of short chains of atypical and pleomorphic cocci embedded in homogeneous membrane. The organism is said by Hlava to be of feeble virulence, and that only when grown in fluid human serum. Much further work is necessary before this streptococcus, which Hlava designates as *Leuconostoc hominis* because of its resemblance to *Leuconostoc mesenteroides*, can be accepted as a definite and distinct form. Because of its frequency in scarlatina Hlava is led to say: "*Der Leuconostoc spielt entschieden eine wichtige Rolle in der Pathogenese der Scarlatina.*" He demonstrated its presence in the blood during life in 6 cases of scarlet fever.

MATERIAL AND TECHNIC.

The cases of scarlet fever that furnished the material for the investigation, the results of which are now presented, occurred partly in the hospital of the Memorial Institute for Infectious Diseases, partly in the Cook County Hospital. I am indebted for courtesy and aid in various ways to Drs. Frank Billings, James B. Herrick and W. L. Baum, and to members of the resident staffs of the Cook County and Presbyterian hospitals.

The blood for the cultures is secured by puncture of some vein at the elbow after careful disinfection of the skin. This is the best method to secure blood for bacteriologic work. Glass syringes with platinum-iridium needles are used. In the case of very young children it may be difficult to puncture accessible veins, and in a relatively small number of instances the effort to secure blood may have to be abandoned. In no case has any evil resulted from the punctures, all of which have healed without the faintest indication of local reaction. The pain of the puncture is insignificant; momentary

* It will be recalled that Kurth (Centralbl. f. Bakt., 1892, xl, 503-509) has made one of the most successful efforts at differentiation of the streptococci by accurate study of their different forms of growth in bouillon and of the sediment that forms therein. From the tonsils in scarlet fever he isolated a form that produces granular or scaly coherent masses composed of very long, interwoven chains with only a few free cocci. This is his *Streptococcus conglomeratus*, which may occur also in the internal organs of fatal

cases of scarlet fever. In Kurth's experience it was never absent from the surface of the tonsils. It may be associated in scarlet fever with other streptococci. *Streptococcus conglomeratus* nearly always kills white mice when inoculated at the root of the tail. It may remain viable for as long as six weeks or so when dried, and, while the question of its etiologic rôle had to be left open, Kurth points out that the transmissibility of scarlatina corresponds well with viability of *Streptococcus conglomeratus*.

washing the skin with 5 per cent. solution of carbolic acid seems to deaden acute sensation somewhat; the drawing of the blood so rapidly as to cause collapse of the vein seems to give considerable pain.

In the early part of the work white staphylococci appeared in the cultures much more frequently than later. White staphylococci have appeared in altogether about 18 flasks and 7 of these occurred among the cultures from the first 10 cases. This certainly speaks in favor of accidental contamination, and it is likely that in spite of painstaking precautions occasional contamination will take place either from the air or by the needle picking up cocci from the skin. As it has been impossible to differentiate the white staphylococci developing from time to time in the flasks from the vulgar staphylococci of the skin and air, it has seemed best, at least for the present, to pay no attention to these organisms. Of course, streptococci may occur occasionally on the skin in scarlet fever. This, however, probably is so infrequently the case that accidental contamination of blood cultures from this source may be left out of consideration. This is probably also a fair view to take of the rôle of the air as a source of accidental contamination with streptococci. In bacteriologic examinations of the skin in some 30 cases of scarlet fever by Mr. Dreyer, he did not encounter streptococcus, and Dr. Weaver met it only once in 18 cases.

In most of the cultures in this series quite large quantities of blood have been used, 0.5 to 1 c.c. in each flask of 150 or 100 c.c. of medium. Usually two flasks or more have been inoculated in each case. The principal reason for using large quantities of blood was to increase as much as possible the chances for positive results in case but few bacteria might be present. The media used were glycerin bouillon, plain bouillon, ascites bouillon (peptone bouillon 2 parts and ascites fluid one part), glucose bouillon and milk. From time to time the adaptability of the media used for streptococci has been controlled carefully. After 48 hours or so in the incubator (mostly under aerobic conditions) subcultures on solid media and stained smear preparations have been made in most of the cases even though there was no definite evidence of growth in the original cultures. When growth was evident plates were made to secure pure cultures.

RESULTS.

The principal details of the cases giving positive results are given in the accompanying table. In many of the cases smears of the blood were examined for bacteria, but in every case so far with negative outcome. In smears from the cultures in which streptococci developed diplococci and short chains were seen often within cells, but this need not necessarily indicate that the cocci occupied an intracellular position in the circulating blood. In no case was hemolysis of human corpuscles *in vivo* recognized, but this was not looked for systematically in all cases, and certainly not with sufficient care (centrifugalization of the whole blood so as to secure clear serum) in the cases that proved to give streptococci in the cultures of the blood. We hope to give closer attention to this point in the future.

In all cases giving streptococci, *Staphylococcus aureus*, or typhoid bacilli pure cultures developed in practically every instance.

Typhoid Bacillemia—In two cases (only one of which is included in the table) the routine bacteriologic examination of the blood discovered the presence in it of typhoid bacilli at a period so early in the development of the disease that suspicion had not yet

been directed to typhoid fever. In one of the cases the typhoidal attack began as the scarlet fever subsided; in the other case the typhoid fever developed in a woman admitted to the scarlet fever ward because of a slight general eruption, which did not prove to be scarlatinal. A third case of this sort has just been observed. In these cases we have a good example of the diagnostic usefulness of bacteriologic examinations of the blood. In both typhoid bacilli were demonstrated some time before the appearance of agglutinins in the blood.

Streptococcemia.—It is not the intention now to discuss the question of the unity or multiplicity of pathogenic streptococci. All the strains isolated in this series, except the one from Case 60, correspond to *Streptococcus longus*, most of them showing pronounced conglomerate growth. Some of the more important facts are given in the following abstracts of the records:

The streptococci isolated on the third and eighth days of the disease in Case 11, appears to be identical. Both give a moderately heavy, crumbling sediment in

Table Showing Positive Results of Bacteriologic Examination of Blood in Scarlet Fever During Life.

Number.	Age.	Sex.	Day of Disease.	Medium and Number of Flasks.	Results.	Character of Attack and Remarks.
11	26	M.	3	Glycerin-broth, 4	Streptoc. in 1 F.	Moderat'ly severe.
			5	" "	Sterile.	See text.
			8	" "	Streptoc. in 1 F	
			12	" "	Sterile	
14	22	M.	7	" "	1 Streptoc. . . .	Mild.
			7	" "	Sterile.	
15	38	M.	2	" "	2 Sterile.	Severe. See text.
			3	" "	Sterile	
			5	" "	Streptoc in 2 F	
			10	" "	Sterile.	
17	10	M.	2	" "	Streptoc in 2 F	Severe. See text.
			6	" "	Streptoc. in 1 F	
21	12	F.	3	" "	Sterile	Moderat'ly severe.
			6	" "	Streptoc in 1 F	
27	22	F.	4	" "	2 Streptoc. in 2 F	Mild.
			7	" "	Sterile.	
33	7	M	5	Asc-broth, 1	Strept c.	Mild. See text.
41	16	M.	2	Glycerin-broth, 2	Sterile	Moderat'ly severe.
			3	" "	Streptoc in 2 F	
57	24	F.	7	" "	Streptoc in 2 F	Moderat'ly severe.
60	23	F.	2	" "	Streptoc. in 2 F	Mild. See text.
			4	" "	Streptoc in 2 F	
68	21	M.	9	" "	Sterile.	Death. See text.
			10	" "	Staphy. aureus.	
72	10	M.	4	" "	Sterile	Very severe See text.
			25	" "	1 Streptoc.	
80	12	F.	1	Glucose-broth, 2		
			7	Collodion sac	Streptoc in sac	Moderat'ly severe.
81	7	M.	10	Glycerin-broth, 2	S. aph. aureus	Death. See text.
			10	" "	Cocci, no growth in subc.	
101	22	F.	6	" "	2 B Typh in both	Scarlet mild.

bouillon, and coagulate and acidify milk promptly. One c.c. of a 24-hour bouillon culture injected intravenously in a rabbit weighing 1,720 grams caused death in 4 days. This virulence was soon lost. On the fifteenth day of the disease the serum of the patient had no marked restraining influence on this streptococcus, nor did the serum of another case of scarlet fever. The streptococcus does not grow in filtrates of its own cultures. Such filtrates remain sterile also when inoculated with streptococci from some of the other cases.

Judging from the temperature curve, pulse record and general course, it can not be said that the streptococcemia in this case produced very marked clinical symptoms. There were no complications.

The streptococcus in the cultures made on the fifth day of the disease from the blood of Case 15 forms a sand-like sediment in bouillon, the particles being composed of conglomerate masses of cocci. It acidifies and coagulates milk. It does not grow in its own filtrates or in the filtrates of cultures of other streptococci in this series. The filtrate of bouillon cultures causes hemolysis of dog's corpuscles. One c.c. of bouillon cultures three

days old kills rabbits in five days after intravenous injection and causes hemolysis *in vivo*. The organism grew well in the serum of the case from which it was isolated and also in that of another case of scarlet fever. Clinically this case showed no glandular enlargement, but there were definite indications of inflammation in the wrist, shoulder and ankle joints which subsided rapidly.

The streptococci isolated from the culture of the blood of Case 17, on the second and sixth day of the disease are identical and form granular masses in bouillon. There is no growth in filtrates of streptococcus cultures. Two c.c. injected intravenously in a rabbit weighing 1,720 grams caused death in seven days. There were in this case severe throat symptoms and also swelling and tenderness of the wrist joints.

In Case 33 the cultures from the blood in ascites bouillon contained atypical streptococcal forms, but subcultures were not obtained. In the cultures made in ascites bouillon from the urine of the same patient there developed a feeble growth of streptococci with an unusual number of swollen, atypical and bacillary forms similar to those described by Ohlmacher,¹⁹ and also noted by Hilbert²⁰ in his work on streptococci in the normal tonsils, as well as by others.²¹

In Case 60 the cultures on both the second and fourth day yielded pure growths of a streptococcus that was provided with a mucoid capsule. This coccus grew like ordinary streptococci on most media, but on Löffler's serum it produced rust-colored spots. This pigmentation disappeared after the second generation. Its pathogenic powers were not tested. The clinical course in this case was very mild, the temperature falling to normal on the fifth day. No complications.

In Case 72 the cultures made on the fourth day of the disease remained sterile. Three flasks were inoculated. On the twenty-eighth day a pure growth of streptococci was obtained. This coccus has the following characteristics: Abundant flocculent growth in the fluid part of Löffler's serum and in the lower parts of peptone bouillon ascites fluid tubes; milk acidified but not coagulated; in glucose bouillon crumbling masses formed at the bottom. The principal facts in the history of this case are as follows: From the time of entrance the patient was for many days more or less delirious; later on he lapsed into stupor and unconsciousness, the clinical picture being distinctly that of sepsis. In the early stages there was an intense pharyngitis and tonsillitis with large swellings of the cervical glands. Otitis developed and for a time there was tenderness over the mastoid processes. During the entire illness there was a marked leucocytosis which gradually passed away. There was no evidence of joint infections or of secondary internal foci.

In Case 80 the cultures made in glucose bouillon remained sterile. At the same time as the cultures were made 1 c.c. of blood was mixed with 9 c.c. of ascitic fluid, first heated to 55 C. for 45 minutes, and placed in a collodion sac. At the end of 24 hours the fluid within and without this sac appeared sterile and the sac was inserted into the abdomen of a rabbit, where it remained for one month without apparent detriment to the animal. When removed the contents of the sac were milky and smears showed minute coccoid bodies not staining readily by methylene blue. The fluid in the sac was alkaline in reaction. Cultures were made on a large number of media, and on most of the tubes there developed a streptococcus, like *Streptococcus conglomeratus*, but only of small virulence that was increased by repeated passage through rabbits. This coccus grew

readily in conglomerate masses in filtrates of its own cultures in milk and glucose bouillon, the reaction being acid to litmus. In the early cultures in milk especially many atypical and irregular forms were observed in the smears. Clinically the case was free from complications.

The streptococcus cultures from Cases 57, 21 and 14 correspond to those of *Streptococcus conglomeratus*. Those from Cases 14 and 41 caused the death of rabbits on intravenous injection of 0.5 c.c. or more: there was hemolysis of the red corpuscles in the rabbit injected with the coccus from Case 41. In Case 52 distinct streptococcal chains developed in the original cultures on the fourth day of the disease, but subcultures did not develop.

The evanescent character of the streptococcemia in some of the cases of this series makes it not unlikely that in many cases it may have escaped detection, especially in the younger patients in whom it was deemed best to make but one venous puncture. Perhaps this may serve also to account in some degree at least for the relatively greater number of positive results in the older patients.

Table Showing the Ages of the Cases.

Age.	1-5	6-10	11-15	16-20	21-25	26-30	31-43	Total
Total number...	9	32	11	10	21	12	5	100
Streptococci in...	3	3	2	1	4	1	1	12

It might be said, too, that perhaps streptococci were not detected oftener because the blood cultures were not made early enough in the attack. It could be answered that in three positive cases the first cultures gave negative results, while later cultures gave positive; further, that of 10 cases examined on the first day only one gave growths.

Table Showing the Days of the Attack When Cultures Were Made.

Day.	1	2	3	4	5	6	7	8	9	10	Later or Unknown	Total
Total number...	10	14	24	17	14	5	4	4	1	1	6	100
Streptococci in first culture...	1	2	1	1	2	..	1	..	..	..	..	8
Streptococci in second culture...	..	..	1	..	..	1	..	..	..	..	1	3
Streptococci in third culture...	..	..	..	..	1	..	..	..	..	..	..	1

Undoubtedly the number of positive results would increase the more frequently from the earliest period the cultures in the single cases could be made. On account of the well-known sensitiveness of streptococci special care must be had always with respect to the media used. In work of this kind positive results are more valuable in the forming of definite conclusions than negative.

Table Showing General Character of the Cases in This Series.

	Mild.	Mod.	Severe.	Severe.	Fatal.	Total.
Total number.....	45	40	11	4	..	100
Streptococci in.....	4	5	3	..	..	12

This summary shows that the relatively largest number of streptococcal growths were obtained from the more severe cases. Two of the fatal cases are accounted for further on; in the other two there was no postmortem examination and in each case of these there was but one set of blood cultures made.

Genesis of Streptococcemia.—In many of the cases giving streptococci in the cultures it seems to concern a streptococcus bacteriemia (septicemia) without localizations in different parts of the body. This form of bacteriemia without metastases is referred to by Monod and Mascaigne,²² and more recently again by Kretz,²³ as common in the eruptive diseases and as only poorly understood, being more marked in some epidemics than in others. No doubt continued routine bacteriologic examinations of the blood in these and other diseases will prove the best source for light on the relations of this

bacteriemia without metastases to the severity of the clinical symptoms as well as on other points not now clearly understood.

The investigations of Hilbert²⁴ and others show that pathogenic streptococci—*Streptococcus longus*—are constant inhabitants of the normal throat, especially the surface of the tonsils. On this account some, like Hilbert, would deny streptococci all importance in the etiology of anginas, but it is difficult to go so far in view of the great increase in the number of streptococci in anginas of various kinds, especially the scarlatinal, a fact definitely established in the cases of this series by Dr. Weaver in this institute. At all events the conditions of the throat in scarlet fever would seem to offer excellent opportunities for general streptococcus invasion either directly by entrance into the blood or indirectly by way of the lymphatics and lymph nodes. The exact mechanism of the general infection is not easily unraveled. It lies too near at hand to assume that it may depend on the loss of bacteriolytic complements of serum. Indeed, this assumption has been made by some who would explain in this way the frequency of streptococcus infection in chronic diseases of various kinds because the serum in such diseases may show a loss of bacteriolytic complements for colon bacilli and typhoid bacilli; but normal human serum has no appreciable bactericidal action on streptococci, so far as this can be demonstrated by the usual methods for such purposes, and streptococcemia is, of course, not to be explained by the loss of certain properties the blood does not possess normally. Experiments made in conjunction with Dr. Weaver show, furthermore, that the serum of cases of scarlet fever of moderate severity does not lose any bactericidal effect on typhoid bacilli, a fact that still further disproves the inference that the loss of bacteriolytic serum complements is responsible for streptococcus infections. It is not the intention to discuss now the relations to streptococcus infection of the leucocytes and of phagocytosis on which Denys, Bordet and Marmorek lay so great a stress. Suffice it to say that in general human tissues appear to be favorable soil for the growth of streptococci; indeed, of all animals Marmorek regards man as the most susceptible for streptococci. There is reason to believe, too, that streptococci grow in virulence when introduced into the human body. In connection with this it is interesting to note, as first shown by Marmorek, that streptococcal virulence—a most changeable quantity—is best preserved in a medium of human serum one part and peptone bouillon two parts. Given then a normally feeble general resistance to streptococci and specially favorable conditions for their multiplication in the throat and on the tonsils in scarlet fever, it need not be an unusual event for streptococci to enter the blood either in small quantities as only transitory sojourners there or increasing in number and virulence to cause the most severe general infections. That this is the case is indicated by the results in this series in which streptococci are shown to have appeared in the blood to such an extent as readily to be demonstrable by inoculating one or two cubic centimeters into bouillon or similar medium, and that in comparatively mild cases in which the normal or uncomplicated course of the disease was not modified to any extent (Cases 14, 27, 33, 60). In other cases, again, the streptococcus invasion was associated with more severe symptoms and a more protracted course (11, 15, 17, 72). Case 72 may be taken as an example of a severe type of streptococcus infection in scarlet fever, terminating in recovery.

The fact that spontaneous recovery may take place in streptococcus bacteriemia, even when severe and long continued, naturally tends to make one somewhat skeptical in regard to the actual benefit of antistreptococcus serum in similar cases. Since the introduction of bacteriologic blood examinations during life, observations have been made that show, as did Petruschky in one of the earliest studies of this kind, that recoveries in various forms of bacteriemia are not so very rare. Bertelsmann²⁵ reports 47 cases of surgical bacteriemia examined bacteriologically during life; in 28 of these it concerned streptococci, and 13 of these were all that proved fatal. In 2 cases the bacteriemia appeared transitory, but recovery took place in cases whose blood yielded as many as 435 colonies on mixing 15 c.c. with agar and pouring into plates.

Influenza Bacillemia.—While streptococci no doubt are the most common agents of general infection in scarlet fever and other diseases of the same group, the investigation of Jehle seems to show that under certain conditions other bacteria also may find open doors, so to speak, to general invasion in these diseases. Jehle²⁶ found the bacillus of influenza so frequently in the blood of fatal cases of scarlet fever (22 times in 48 cases), measles (15 times in 23 cases) and varicella (5 times in 9 cases) as compared with non-eruptive diseases, that he believes the exanthemas in some way favor the general infection with this bacillus when it is present on the tonsils or in the bronchial exudate. This form of secondary infection may cause a high mortality. In scarlet fever influenza bacillemia may occur even before the rash breaks out. In this work not a single case of this form of secondary invasion has been encountered, although it has been kept in mind, almost from the first; the mixing directly of considerable quantities of blood with glycerin, glucose and ascites bouillon would seem to offer proper conditions for the growth of the bacillus of influenza. It must be borne in mind, however, that during the past year influenza has not been especially prevalent in Chicago. Not a single case of the disease has been recognized among the cases of scarlet fever composing this series nor in the wards occupied by them.

Staphylococcemia.—In the two fatal cases of this series *Staphylococcus aureus*, and not streptococci, developed in the cultures made during life. In both cases it concerned pure cultures.

CASE 68.—Man, 21, admitted to the hospital of the Memorial Institute for Infectious Diseases on the 9th day of a severe attack of scarlet fever. There was beginning desquamation; swelling and erosions of lips and nostrils; purulent conjunctivitis, pharyngitis and otitis; swelling and tenderness on both sides of the neck; heart and lungs normal; spleen palpable. Violent and nearly continuous delirium set in. The cultures from the pharynx showed streptococci and staphylococci, those from the ears streptococci. Lobular pneumonia developed and death took place on the 16th day of the attack. There was no leucocytosis but rather leucopenia—9,500, 3,300 and 5,200 on the 10th, 12th and 15th days respectively.

The cultures of the blood made on the 9th day of the disease, the day he entered the hospital, all remained sterile. Three days later new cultures developed rapidly a liberal growth in pure form of *Staphylococcus aureus*. In both the flasks there were seen the day after inoculation numerous irregular masses, much like the plugs of exudate in lobar pneumonia, scattered over the bottom and clinging to the sides, each mass being surrounded by a circle of hemolysis. This coccus produced a funnel-shaped liquefaction of gelatin, coagulated and acidified milk, and formed golden-yellow pigment, especially on potato and blood serum. Blood from this case preserved in glass tubes with bouillon in proportion of 2 to 8 also underwent hemolysis.

Anatomic Diagnosis. (Dr. Robinson):—Desquamation of scarlet fever; pustules on arms, neck and legs; bronchopneumonia; pulmonary infarction; ulcerative pharyngitis; suppurative otitis; acute splenic swelling.

Cultures made from the heart's blood at the time of the autopsy showed *Staphylococcus aureus* only; those from the lungs showed *B. mucosus capsulatus* and *Staphylococcus aureus* as did also the cultures from the bone marrow. The liver contained *B. mucosus capsulatus*. The kidney, brain and spleen were sterile.

CASE 81.—Boy, age 7, admitted on the 7th day of the attack, much emaciated, throat ulcerated, cervical glands enlarged. Beginning desquamation. Pulse weak and intermittent. Bloody discharge from nose and mouth. Semi-unconscious. Death on the 11th day. Leucocytes on the 10th day, 32,000.

The cultures from the blood made on the 7th day of the disease gave pure growths of *Staphylococcus aureus*. The cultures made two days later showed cocci in the smears, but all subcultures remained sterile.

Anatomic diagnosis.—Scarlatinal desquamation; pharyngeal necrosis and ulceration; acute cervical lymphadenitis; splenic swelling; acute renal degeneration; enlargement of intestinal lymph nodes and of mesenteric glands; esophageal ulceration; multiple purulent arthritis; pleural adhesions. The cultures made at the autopsy gave the following: Plate cultures from blood, bile and pus in the left knee-joint remained sterile. The spleen gave streptococcus and colon bacillus; the liver streptococcus; the kidney colon bacillus. This streptococcus grows in conglomerate masses in bouillon.

In this interesting case it looks as if the staphylococci in the blood on the seventh day died out completely. There was, however, a coincident or subsequent, more likely the latter, streptococcus infection, as shown by the presence of this organism in the liver and spleen at the autopsy. The case indicates more the complexity of these secondary conditions than would be apparent from knowledge of postmortem findings only. Recovery from staphylococcemia is perhaps more frequent than thought; instances of it are described recently by Hug²⁷ and by Raymond and Alexandre.

RELATIONS OF STREPTOCOCCI TO SCARLET FEVER.

We come now to a brief discussion of the very important question of the exact relation of streptococci to scarlet fever. I have pointed out that some investigators impressed especially with the frequency, not to say constancy, of streptococcus infection of a general character in fatal forms of the disease, look on the streptococcus as playing a specific part in the scarlatinal process. The results of this study of the bacteriology of the blood of scarlatina in life, if they are to be given any value in deciding this question, would seem rather to favor the view that the streptococcus infection is secondary because-absent in the large majority of the cases, even severe ones, and because though absent in the early part it may appear in the later stages of some cases. It seems to me that the theory that scarlatina is a streptococcus disease does not receive any direct support from these observations. In this connection it may be well to refer to the fact that streptococci seem to occupy about the same relations to diphtheria and to smallpox as they do to scarlet fever, if we judge from the frequency of streptococcus infections in these diseases. Dahmer²⁸ obtained streptococci from the heart's blood and spleen in 47 per cent. of 36 cases of fatal diphtheria, from the lungs in 85 per cent. and from the trachea in 100 per cent. As stated, Slawyk found streptococci in the blood in 22 and 20 per cent. of fatal cases of measles and diphtheria respectively. The literature on streptococcus infection in diphtheria is further reviewed by Councilman, Mallory and Pearce in their comprehensive study of this disease.²⁹ In Flexner's³⁰ statistics

of terminal infections in chronic heart and kidney disease, the most prominent organism, in the local as well as the general infections, appears to be the streptococcus either singly or associated with the organisms.

James Ewing³¹ found a streptococcus in the heart's blood of all of 29 cases of smallpox, the abundance being directly proportional to the severity of the disease. In five examinations during life all the cultures of the blood were sterile, but Arnaud³² is quoted by Ewing as having found streptococci in the blood of two hemorrhagic cases during life. Ewing also found streptococci generally in the variolous skin lesions. This streptococcus, which does not seem to have any cultural or morphologic peculiarities, was pathogenic for mice and rabbits, but in no case did it produce any variolous lesions, while material from pustules caused smallpox in two monkeys. In hemorrhagic smallpox Ewing believes the condition to be one of symbiosis of the specific agent and the streptococcus. It would be interesting to know the results of the bacteriologic examination during life of a large series of cases of smallpox, which we see is a disease just as prominently associated with streptococci as is scarlet fever, but in which it is possible to show definitely that the real cause is distinct and peculiar.

In the face of these considerations it seems to me that the best hypothesis of the etiology of scarlet fever for working purposes is the one that in this disease two infections generally coexist in the oro-pharyngeal cavity. The cause of the specific, primary infection is unknown. So far its existence has not been rendered evident except by the specific contagious and clinico-epidemiologic peculiarities of scarlatina. The well-marked and durable active immunity, an immunity entirely different from anything we know of spontaneous or experimental streptococcus diseases may also be cited as strong evidence of a specific primary infection in scarlatina. The second infection is the streptococcus infection, which may be regarded as practically constant because there seems to be in all cases of scarlet fever a marked increase in the number of streptococci in the throat as compared with normal conditions, but this infection does not seem, as a rule, to be generalized when we except the severe, fatal cases. Whether the virus of scarlet fever directly increases the virulence of existing streptococci, stimulating them to the production of toxins peculiar to scarlet fever, and whether it favors general streptococcus infection by decreasing local or general resistance to streptococci, whatever the factors concerned may be, are questions on which further light is greatly needed.

Welch's Theory of Bacteriogenic Cytotoxins.—The view has also been advanced that scarlet fever is in one way a local disease and caused by *Streptococcus longus*, which, localizing in the pharynx, produces an erythrogenic toxin (Berge³³). Much discussion has been carried on as to the specificity of the scarlatinal streptococci, but without final settlement of the question. It has been suggested that the cocci may be ordinary, well-known streptococci that under special conditions from a limited pharyngeal focus produce a specific toxin which, carried in the circulation, calls forth the cutaneous eruption. This view recalls the interesting theory recently advanced by Welch³⁴ in order to explain some of the effects of pathogenic organisms on the cells of the host not readily explainable by what can be learned from the study of bacterial cultures and the toxic substances there produced. This is the theory of the production of bacteriogenic cytotoxins under the influence of stimuli from the host according to the general principles of Ehrlich's

great theory of the production of toxins and lysins in general. In response to the action of atom complexes from the cells and fluids of the host the bacteria produce substances with special affinities that act as intermediary bodies in linking to cells of the host toxic complements derived either from the fluids of the host or from outside sources. It is, of course, conceivable that streptococci under special conditions might cause the symptoms and signs of scarlet fever, according to the principles of Welch's hypothesis of bacteriogenic toxins of somatogenic origin. This view of the nature of scarlet fever as yet lacks experimental proof. It receives neither support nor discredit from the results of this study.

CONCLUSIONS.

The conclusions that suggest themselves from this work so far as scarlatinal streptococcemia is concerned are that streptococci occasionally may be found in the blood of cases of scarlet fever that run a short, mild, and uncomplicated clinical course; that streptococci occur with relatively greater frequency in the more severe and protracted cases of scarlet fever in which there also may develop local complications and clinical signs of general infection, such as joint inflammations, but even in the grave cases of this kind spontaneous recovery may take place; and finally, that streptococcemia may not be demonstrable in fatal cases of scarlet fever. The theory that scarlet fever is a streptococcus disease does not seem to receive any direct support from this work.

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The metric system is objected to by some London physicians on account of the liability of mistaking the abbreviation of "gram" for that of "grain." This difficulty is easily overcome by following the practice in the United States of designating "gram" by the abbreviation capital "Gr.," or "Gm.," and continuing to designate "grain" with small "gr." What is more, a prescription written in the metric system is very likely to have other terms than that of "gram," and no pharmacist would expect to receive a prescription with some terms in the metric system and others in the old, cumbersome system.—*Meyer Bros. Druggist.*

THE GLYCOSURIC SYMPTOM OF DISEASE AND ITS MEDICINAL TREATMENT.*

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An unusual amount of grape sugar in the urine is by no means an absolute indication of the presence of diabetes mellitus; it may be concomitant with, or sequential to, various other transitory, as well as chronic, anomalies. Thus glycosuria in its alimentary form *e saccharo* may be induced in the presence of various traumatic and non-traumatic neuroses; of alcoholism; of Graves' disease; of gastrointestinal disorders, as hyperacidity; of hepatic affections, etc.

Glycosuria, mostly of the spontaneous transitory type, may appear after injury and extirpation of less important organs; after ether and chloroform anesthesia; after administration of drugs and chemicals like phloridzin, mercuric bichlorid, chloral, morphin, strychnin, amyl nitrite, curare, thyroid preparations, adrenalin, etc.; after inhalation of carbon monoxid; after the excessive use of tobacco; during the luetic process, and during or after infectious diseases.

Generally speaking, non-diabetic glycosurias are the result of intoxications, that is, of slight or graver disturbances due either to influences coming from without or to such arising from within. Some transitory glycosurias may attain a certain degree of chronicity by the persistence of their underlying cause. These factors, however, are mostly of a non-permanent nature. While thus non-diabetic glycosuria may occasionally continue for protracted periods, diabetic glycosuria, or what is considered such, the concomitant phenomenon of exceedingly chronic processes is chronic in the majority of instances.

The vast difference between non-diabetic and diabetic glycosuria is the endurance of the causative factors in the latter. True diabetes exists before excretion of sugar supervenes,¹ and apart from some very rare exception, it still continues when, for the time being, glycosuria has ceased.

While we are able to assign or to trace the majority of non-diabetic glycosurias to a direct or more remote factor, we have as yet not succeeded in determining the substratum of diabetes proper. While, therefore, non-diabetic glycosurias may be amenable to rational treatment by influencing or removing their causal conditions, the therapy of true diabetes, on account of our meager knowledge concerning its pathology, must of necessity be of a more or less empiric nature.

Hence it occurs that the diet plays such an important rôle in the treatment of diabetes mellitus. Total or partial withdrawal of carbohydrates from the nutriment results in decrease or complete cessation of glycosuria and in obliteration of the other characteristic phenomena in almost every instance. Again, the exclusion of starch and saccharous material from the food remains not without influence on non-diabetic glycosuria. Under an antidiabetic regimen non-diabetic mellituria is frequently diminished, but although the latter hardly ever attains that degree of intensity which is common in diabetic glycosuria, yet it does not yield to carbohydrate-free nutriment in the same measure as diabetic glycosuria.

Those cases of long-continued glycosuria which are not modified by a diet devoid of farinaceous material, as

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on *Materia Medica, Pharmacy and Therapeutics*, and approved for publication by the Executive Committee: Drs. A. W. Easer, A. B. Lyons and W. J. Robinson.

a general rule, are non-diabetic. This is especially the case (excepting, of course, when the patient is in the last stage of diabetes) when progressive bodily decline ensues after persistent adherence to a rigid antidiabetic dietary.

Furthermore, there are some instances in which diabetic glycosuria occurs contemporaneously with chronic non-diabetic mellituria in one and the same individual. Here the diabetic glycosuria and the other diabetic phenomena may subside on dieting; the glycosuria of non-diabetic origin, however, is likely to continue.

The good results attained by instituting a rigid diet in diabetes and its concomitant glycosuria lead to the supposition that analogue improvement would accrue from it in other glycosurias. In fact, little discrimination is exercised between the various types of glycosuria; one is, as a rule, treated like the other, that is, by an anti-diabetic regimen.

Apart from exerting little or no influence on the respective foundation of the various non-diabetic melliturias, it is evident that the indiscriminate adaption of this excellent empiric method in combating the diabetic state to the treatment of all glycosurias irrespective of their underlying cause, is irrational and undoubtedly injurious in many instances.

If we bring to our mind that glycosuria is but a consequence, but an enunciation of manifold causes, we will understand that it is useless to treat the symptom *per se* and that we must try to influence the causal conditions directly.

Moreover, is it necessary to combat glycosuria whenever it occurs? My experience prompts me to say "No." If the patient feels well and if there is no evidence of physical or mental decline, I think we should not attempt to interfere with an eventual slight glycosuria. The end may not justify the means, especially if routine treatment implying deprivation is to be employed.

On account of the general application of the dietary methods to the management of the various glycosuric states and on account of injudicious prescribing and the polypharmacy of former years, medicinal treatment has of late been relegated to the rear. In the degree however, in which the influence of diet on amelioration of all the forms of mellituria has been overestimated, the potency of a number of medicinal agents on the various substrata of the glycosuric symptom is nowadays unquestionably underrated.

When both dietary and medicinal treatment are instituted contemporaneously, the real value of either of them can not be determined, because an eventual amelioration of the glycosuric symptom may be due to the diet alone, to the medicament alone, or to their combined influence.

INDICATIONS FOR THE INSTITUTION OF DIETARY TREATMENT ALONE.

All patients exhibiting the usual syndrome of diabetes mellitus, whose urine is free from acetone, diacetic and beta-oxybutyric acids, should be subjected to strict dietary regulations until all the symptoms have completely subsided, or until all symptoms excepting glycosuria, which in the meantime has declined to less than 1 per cent., have disappeared.

INDICATIONS FOR THE INSTITUTION OF MEDICINAL TREATMENT ALONE.

1. All cases systemically declining on the regulation of diet.

2. All cases in which a long-continued rigid diet can not effect complete cessation of the glycosuric symptom.

3. All cases excreting less than 1 per cent. of glucose in which the patient suffers from some disorder but does not exhibit the usual symptom-complex of diabetes mellitus.

4. Such cases in which diet has brought about subsidence of diabetic phenomena, but in which continued mental excitement is liable to effect recurrence of glycosuria.

INDICATIONS FOR BOTH DIETARY AND MEDICINAL TREATMENT.

1. All cases in which a dietary as well as a specific hygienic treatment is indicated and in which the patient through circumstances is prevented from properly executing them.

2. All cases exhibiting the syndrome of diabetes mellitus, but which for reasons of an accompanying affection, like chronic nephritis, for instance, can not be kept under a rigid antidiabetic regimen.

The following lines are devoted to the consideration of such drugs and chemicals which I have employed for the purpose of obliterating certain disorders and anomalies and the glycosurias accompanying them. Being entirely based on personal experience, it is obvious that account can be furnished of but a limited number of medicinal agents and their respective modes of employment.

Medicines do not seem to exert any influence in arresting the progressive tendency of diabetic deterioration, that morbid state characterized by apparent disintegration of body albumin into carbamid and dextrose. The medicinal treatment of this affection, with its unknown, or at least very obscure pathology, of course, was not considered at all. The medicinal treatment of chronic glycosurias of supposedly known origin, however, is dwelt on in the following.

PSEUDO-REMEDIES.

In the treatment of the glycosuric symptom we have to distinguish between two kinds of drugs and chemicals, viz., those which act as genuine remedies and those which interfere with various tests for urinary glucose, thereby misleading us to assume a lesser degree or the absence of glycosuria. Among the pseudo-remedies there are a number of so-called intestinal antiseptics which interfere more or less with the various testing methods, especially with the fermentation test. Jolles² pointed out that the guaiacol compound, known as benzozol, introduced into the organism yields levorotatory substances which would on that account indicate an apparent decrease of dextrose if the urine were examined polariscopically.

Record of Mrs. C. L., aged 59 years.

Date.	24 hrs. Urine. cc.	Medicine.	Dose.	Glucose.			
				Fermentation.		Fehling.	
				p. c.	grms.	p. c.	grms.
Sept. 20	2100	...	...	3.22	67.62	3.33	69.93
25	2350	Salol . . .	0.3 gram 1 times a day for 3 days.	1.84	43.24	3.12	73.32
29	1960	Acid carb.	gtt. 2, 3 times a day for 4 days.	2.3	45.08	3.57	69.972
Oct. 6	2150	Ac. salicyl.	0.3 gram 3 times a day for 5 days.	2.07	44.505	3.8	81.7
13	2000	Ac. benzoic	1 gram 4 times a day for 6 days.	2.76	55.2	3.8	76.
20	1740	Calomel .	0.5 gram on this day.	2.99	52.026	3.33	77.942
27	1850	Beta-naphthol salicylate.	0.35 gram 1 times a day for 1 week.	2.07	38.205	2.77	51.245

During the last year I have made a series of observations in glycosurias regarding the influence of certain

remedies on the urinary fermentative qualities. These observations are not as yet concluded, but to give an idea of the potent influence of some medicines in preventing complete fermentation, I cite from my notes the following instance:

Among the chemicals interfering with the reduction of the copper and bismuth solutions, thereby deceiving the observer as to the true state of affairs, is benzoyl-sulphonic imide the saccharin of commerce.

MEDICINAL AGENTS IN GLYCOSURIA DEPENDING ON PERVERTED FUNCTION OR REMOVAL OF GLANDS AND ORGANS.

(a) *Pancreas*.—As a general rule, pancreatic glycosuria is very little influenced by medicines. An alkaline treatment may avert its rapid progression, but it exerts no action on the existing phenomena. The ingestion of large amounts of alkaline waters, of course, diminishes the percentage of glucose by diluting the urine; the absolute amount of excreted glucose, however, remains thereby unaltered. Preparations of pancreas avail nothing beyond improving proteid-fat assimilation; they may thus prevent further systemic retrogression or may even effect augmentation of body weight. In a case of undoubted pancreatic diabetes with which was associated far-advanced chronic diffuse nephritis and achylia gastrica, I finally succeeded in reducing the glucose output which originally amounted to over 100 grams per diem, to 10 or 15 grams a day with the aid of this combination:

R.	Pancreatin	gr. xxx	2
	Trypsin		
	Foliae myrtilli pulv., āā.....	gr. xv	1
M.	Ft. pulv. d. tal. dos. L. (50).		

Sig.: One powder three times a day.

As the patient was under an exclusive milk regimen there is no doubt that it was the medication which effected the glucose reduction. The subsidence of the nephritis as well as of the diabetic phenomena went hand in hand with the decline of the glycosuria. The case was under my observation about two years ago, and appeared then rather hopeless. Lately I heard that the patient is well enough to attend to his business.

The trypsin was added to the pancreatin after this *per se* had been prescribed and had been found wanting. It was my intention to add each of the three pancreatic ferments to the pancreatin—separately, of course. This was done to increase the action of the pancreatin and to find out whether any of the pancreatic ferments occurred in diminished amounts in the organism to the deficiency of which the glycosuria could have been due.

The same combination worked satisfactorily, at least for some time, in some other instances of apparent pancreatogenous glycosuria. In two or three similar instances, however, it displayed no activity whatsoever.

(b) *Liver*.—Common or hepatogenous glycosuria, that form which is due to interference with the glycogenic function of the liver to the extent that the ingested carbohydrates are not utilized normally,³ is best managed by dietary means. In exceptional cases only, as in the presence of acetonemia and acidosis, or where on account of an associated affection a strict antidiabetic regimen can not be continued for any length of time, is medication called for. It is here that the various alkalies and the prolonged administration of arsenical preparations do most good.

Chionanthus virginica has given me good results in some glycosurias which were dependent on functional liver disease.

In acid intoxication the following combination has given me very gratifying results:

R.	Sodii bicarbonici		
	Calcii carbonici prec., āā.....	5iiss	45
	Sodii pyrophosphorici	5iiss	10
M.			

From 10 to 50 grams of this combination should be taken every day in plain or carbonated water for a protracted period.

When coma seems imminent, and during the comatose state, from 2 to 6 grams of precipitated calcium carbonate, suspended in water by the addition of 25 per cent. its weight of acacia, and administered every 2, 3 or 4 hours of enteroclysis, has proved very useful in my hands.⁴

Mineral waters deserve some recognition in the therapeutics of hepatogenous glycosuria. The action of the salt solutions, however, contrary to former belief, is not a direct one. By increasing cellular metabolism they stimulate hepatic activity, and hence there may be a greater tolerance for carbohydrates.

As a general rule, the glycosuria yields in the same ratio as the underlying affection disperses.

(c) *Gastrointestinal Tract*.—Chronic affections of the stomach and intestines stand occasionally at the foundation of enduring glycosuria. I had a case under observation in which long-continued hyperchlorhydria proved to be the cause of the obstinate glycosuria, as by suppression of the former the latter became also obliterated.

If an individual has glycosuria and at the same time a chronic gastric or intestinal disorder, the latter should be treated first, especially when other diabetic phenomena are missing and when the excreted dextrose amounts to less than 1 per cent. Of course, such dietary treatment has to be pursued, as the particular gastric or intestinal affection demands. I think milk is best adapted for most cases, at least at the outset. If, in addition to the proper diet the same medication were employed as would be if glycosuria were not present, there is little doubt that with the amelioration of the underlying affection the glycosuria would also cease.

Antacids, antifermentatives, stomachics, etc., and stomach or rectal tubes should be utilized in much the same manner as if the glycosuric condition did not exist.

(d) *Kidneys*.—Phloridzin glycosuria, the association of chronic diffuse nephritis with glycosuria when the former is antedating the latter, and the frequent excretion of glucose in renal hemorrhages seems to point to an eventual renal origin of glycosuria.

I have seen four cases in which glycosuria followed pre-existing Bright's disease. Dietary regulations adapted to the condition of the kidneys—milk predominating—and medication directed toward amelioration of the nephritic state, brought about decided general improvement in two cases. In the one case, urinary glucose, after three weeks' treatment, was reduced from 0.47 to 0.14 per cent., and in the other, glucose was not excreted any more in appreciable amounts in the second week following the institution of treatment.

(e) *Other Organs*.—As long as the functions of a diseased or extirpated organ are assumed by another organ, in other words, as long as the metabolic equilibrium remains undisturbed, glycosuria will not occur. It is therefore often necessary to treat, that is, to stimulate, the organs which are expected to exert vicarious functions.

In a case under my observation glycosuria occurred after ulceration and subsequent removal of both sub-

lingual glands. A diet somewhat reduced in starchy material, an occasional mild ptyalagogue and the administration of ptyalin, or pancreatin, kept the glycosuria in check for over two years. Later true diabetes supervened, for the treatment of which a rigid antidiabetic diet had to be resorted to.

Hyperthyroidism is occasionally associated with glycosuria. In the two cases of the association which came under my observation thyroid therapy, arsenic, etc., were of no avail.⁵

MEDICINAL AGENTS IN GLYCOSURIA DEPENDING ON URICACIDEMIA AND POLYSARCIA.

Glycosuria arises not infrequently from a gouty basis. This is readily understood when we remember that both may be the result of similar intracellular processes. The medicinal treatment should be chosen to influence the substratum common to both affections. In such instances diabetic phenomena, excepting glycosuria, if present at all, are only slightly pronounced. The glycosuria hardly ever exceeds 1 per cent.; the urine is normal, or almost normal, in amount; its density is high.

As a rigid antidiabetic diet is here contraindicated on account of the mild form of the secondary affection and of the untoward influence it may exert on the gouty state, medicaments should be the factors mostly to be dependent on in the therapy of the two concurring conditions.

Antilithiatic measures causing amelioration of the gouty affection subdue also the accompanying glycosuria in the majority of instances. In those cases in which glycosuria persists after cessation of the gouty phenomena, glycosuria is very likely the original abnormal condition and is depending on some other cause.

Medicines like the salicylates, salol, piperazin, tincture and salts of iodine, aspirin, various alkalies, alkaline-muriatic waters, and, in a sense, also opium, formerly lauded as efficacious in the treatment of glycosuria and diabetes, probably possess remedial qualities only when the glycosuric condition is the consequence of a gouty process.

When obesity preceded glycosuria, a diet effecting reduction of body weight is imperative. Diet as well as exercise should be carefully regulated according to the type of obesity.⁶ Thyroid therapy, on account of its well-known tendency to produce or to intensify glycosuria, should be resorted to only under extreme circumstances. Fucus vesiculosus, especially the citric acid extract as devised by me, I have found of great value in the reduction of polysarcia and its accompanying glycosuria.

MEDICINAL AGENTS IN GLYCOSURIA DEPENDING ON LUTETIC CONDITIONS.

Syphilitic infection seems to be much oftener the direct cause of glycosuria than is generally assumed. We have syphilitic affections of the liver, of the gastrointestinal tract, of the pancreas and especially of the brain. Glycosuria may be attendant on an eventual syphilitic process in any of these organs. I have seen two cases during the last year, both young men who were rejected by two of the large life insurance companies on account of "diabetes." In Case 1 the excreted glucose never amounted to more than 0.25 per cent., or about 3.5 grams per diem; in Case 2 from 5 to 6 grams of glucose were egested daily. Both patients admitted to have been infected with syphilis. Antiluetic treatment resulted in the cessation of glycosuria in Case 2; Case 1 is still under observation as the glycosuria persists. Case 2 was granted a life insurance policy some time ago.

Potassium iodid and the mercurials are the indicated remedies. Mercury should be applied by inunctions or by subcutaneous injections. I have seen speedy results following the hypodermatic injection of mercuric bichlorid. This, by the way, is the only rational manner in which to administer corrosive sublimate. Introduced into the stomach it is frequently followed by untoward secondary effects, and it does not display that degree of activity which it exhibits when injected hypodermatically. I use solutions of the strength of 1, 2 and 3 per cent., to each of which 2 per cent. sodium chlorid is added. I generally start with 8 drops of the 1 per cent. solution, adding two drops at each subsequent injection. When 15 or 20 drops have been used—the capacity of the ordinary hypodermic syringe—I continue with 8 or 9 drops of the 2 per cent. solution, adding but one drop at each subsequent injection. If, after prolonged administration of 15 or 20 drops of the 2 per cent. solution, the syphilitic process is not under control, the 3 per cent. solution should be utilized. In the first two weeks injections are daily made; later on they are administered at first every second day and then twice a week. I inject the solutions through a platinum iridium needle, which is introduced at least to the depth of three centimeters in order to prevent abscess formation. The injections are best made into the buttocks.

MEDICINAL AGENTS IN NEUROGENOUS GLYCOSURIA.

Chronic glycosuria is very frequently the enunciation of an affection of the nervous system. It has been found to occur in tumors of the brain, particularly when located in the medulla oblongata, cerebellum or pons varolii; in dementia paralytica; in multiple sclerosis; in cerebrospinal meningitis; in cerebral hemorrhage; in encephalomalacia; in tabes; in affections of the sympathetic nervous system; in traumatic conditions of the brain; in traumatic and functional neuroses, etc.

Generally speaking, the neurogenous type of glycosuria is the one in which medicinal treatment seems *a priori* indicated. The majority of medicaments propounded for the "cure of diabetes" exert their action on and through the nervous system. Opium (morphin, codein, heroin, dionin), the bromids, chloral hydrate, chloralamid, antipyrin, acetanilid, phenacetin, belladonna, strychnin, *Syzygium jambolanum*, ergot, uranium nitrate—these all influence the nervous system to a greater or less extent.

In certain instances of neurogenous glycosuria, especially in such cases where the output of glucose does not exceed 1 per cent., that is, about 15 grams per day, and where the patient is rather emaciated, well-directed medicinal treatment alone will often afford relief of the nervous affection as well as of its glycosuric phenomenon. In other cases, however, in which we have to deal with a well-nourished and even obese subject egesting more than 1 per cent. of grape sugar, a proper dietary treatment, at least at the outset, should go hand in hand with the administration of medicines.

As many of the nervous conditions underlying glycosuria are of an exceedingly chronic nature, the poisonous and narcotic remedies should be resorted to on exceptional occasions only. I do not think that I prescribed opium or its alkaloids or derivatives (for the condition *per se*) more than in 5 per cent. of the several hundred cases of chronic glycosuria which have come under my observation. I only give opium when excessive cellular catabolism is to be arrested, that is, in cases rapidly declining. Opium retards the intracellular processes, and on this account it may act efficaciously in the

specific instances, at least for the time being, however, in consequence thereof it is a double-edged sword which may also cut the other way.

If the effect of opium is desired, its alkaloids or derivatives should not be given. In the control of the glycosuric symptom opium seems to exhibit qualities not possessed by either of them. However, morphin is more reliable than codein, and this acts prompter than heroin or dionin.

The bromids, cerebral and spinal depressants as they are, may subdue some of the nervous symptoms, but I found them rather indifferent concerning suppression of the glycosuric phenomenon. Chloral hydrate, by reason of its antispasmodic and depressant properties, affords relief in certain conditions of the nervous system underlying glycosuria without influencing the latter.

Antipyrin is not without merit in reducing glycosuria consequential to functional neurosis, particularly if the latter is a sequela of an acute infectious disease. Glycosuria on the basis of a traumatic neurosis sometimes yields to belladonna or atropin. I have seen satisfactory results from the administration of small doses of ergot in glycosuria following injury of the nervous system. In no case of glycosuria in which uranium nitrate alone was employed did I notice any material change in the output of glucose.

Syzygium jambolanum is undoubtedly that agent which is of greater value in the suppression of neurogenous glycosuria than any other medicinal substance as yet advocated for that purpose. Preparations of this drug obtainable are powdered jambul seeds and fluid extract of jambul seed. The dose of either should be in the beginning 0.75 gram three times a day; this is to be increased to 10, 20 and even 30 grams a day.

I had a solid extract prepared from the jambul seeds which in appearance and consistency resembles the extract of aloes. I prescribe it in the form of pills or capsules. I have given as much as 10 grams a day of this solid extract.

There seem to be different qualities of jambul seed in the market. I judge so from the degree of activity displayed by various specimens. When, therefore, the administration of jambul has proved a failure in lowering the glucose output, it is best to obtain the drug from some other source and to try it again.

Jambul in small doses may be given for protracted periods. It is best to continue its administration indefinitely in all those conditions where the nervous affection proves to be unyielding and where the accompanying glycosuria is generally of a low degree, but tending to occasional exacerbations. The following mass may be put up in pills or gelatin capsules. In cases where the combination was indicated it has nearly always kept the glycosuria at a minimum point:

R. Ext. seminis jambulæ.....	3i xss	37 1/2
Ext. valerianæ.....	gr. cxiiss	7 1/2
Ext. fuci vesiculosus.....	gr. lxxv	5
Ext. cypripedii		
Ext. scutellariæ, āā.....	gr. xxxviiss	2 1/2
Ext. piscidiæ erythrin.....	gr. xx	1 1/25
Ext. gelsemii		
Ext. belladonnæ, āā.....	gr. viiss	0 1/2
Ext. physostigmæ.....	gr. iv	0 25
Aloin.....	gr. xv	1

M. Ft. Massa et divide in pil. (caps.) No. CC. (200). Sig.: From three to twelve pills (capsules) a day.

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DISCUSSION.

DR. W. W. TOMPKINS, Charlestown, W. Va.—In the region in which I live the population is about one-third negroes. They are largely syphilitic and tuberculous, but it is remarkable that I have never seen a case of diabetes or glycosuria in the colored race. Other practitioners in my neighborhood, on being asked, could not recall having seen a case. I can not offer any reason for the immunity, if it exists; they live in about the same way and eat the same food that the whites do. —They eat sugar and are very fond of sweets, but do not seem to have glycosuria as the whites do. Has the author made any observations on this point? I do not just comprehend the difference that Dr. Stern made between glycosuria and diabetes and wish for a clearer definition.

DR. H. C. WOOD, JR., Philadelphia—I have given methylene blue to three cases of diabetes mellitus, with apparently good results in two. One case improved very distinctly; this case happened to be in a negro. On one point I desire some light: Does the form in which the carbohydrates are administered in these patients make any difference? In the German medical journals lately much has been said about the value of potatoes in the dietary of diabetics. I can not understand the rationale of giving potatoes and excluding bread; or why potatoes should be good and bread bad for a patient with diabetes.

DR. HENRY R. SLACK, La Grange, Ga.—In regard to the use of potatoes as a substitute for other forms of starchy food in diabetes, I have closely watched several cases while under this treatment in the Johns Hopkins Hospital at Baltimore. A number of experiments were made with regard to the effects of different articles of diet on the excretion of sugar. In one case, a divinity student, after taking 500 gm. of bread, 390 gm. of grape sugar were excreted; while after taking 800 gm. of potatoes he only had 90 gm. of sugar in his urine. In another case, that of a young woman, while the results were not so marked as in the former, yet the decline in the glucose was notable. On 400 gm. bread she excreted nearly 300 gm. sugar, while on 600 gm. potato it was less than 100 daily. One day I was much surprised, while the patient was on the potato diet, to find that the amount of sugar suddenly went way up, to over 200 gm.; but I discovered afterward that visitors had been with the patient the day before, and that they had given her about a quarter of a pound of candy to eat, which fully explained it. However, in a few days, with care in the diet, the amount of sugar again diminished. It showed that while the girl had only eaten about 60 gm. of candy still the candy had so stimulated the glycosuria that not only the candy was added to the sugar but more of the starch of the potato had also been converted. I offer no explanations for this phenomenon, but merely state it as a clinical observation that less sugar is excreted when the patient is kept on potatoes than when on any other form of starchy food.

DR. W. J. ROBINSON, New York City—There are many diseases about which we really know very little; but about diabetes and rheumatism we know less than of any other. We know absolutely nothing about the etiology of either disease. With regard to the use of potatoes in the diet: A few years ago if a physician had dared to propose the use of potatoes it would have been taken as an indication of gross ignorance; but now this is advocated by some of the best practitioners. It has been suggested in explanation that the potato contains a large amount of potassium salts, and that the condition giving rise to the diabetes is favorably affected by these salts in the potato, when used as food. It is also claimed that the carbohydrates of the potato act more favorably than other starches. If this is so it will explain the reduction in the grape-sugar of the urine when potatoes are used. Whether true or not, if the result of eating potatoes is a reduction of the glycosuria, we

can give them empirically, just as we use certain drugs in the treatment of diabetes, on a purely empirical basis.

DR. A. B. LYONS, Detroit—Not long ago my attention was directed to one of the many preparations recommended to physicians for the treatment of diabetes, which was said to be made from one of the myrtaceæ. The formula given called for "myrtle (crystals)." This puzzled me at first, but on examining the preparation I arrived at an interpretation. Myrtle crystals can mean nothing but jambul seeds, a well-known remedy in some forms of glycosuria.

DR. W. J. ROBINSON, New York City—A few years ago a remedy for diabetes was brought out and was much vaunted in Germany by the manufacturers as an infallible specific. It was called "musol." It was found afterward that it was absolutely nothing but salol.

DR. HEINRICH STERN, New York City—Some of the participants in the discussion must have misunderstood me as I did not utter a single word as to the medicinal treatment of diabetes mellitus. I merely considered the glycosuric symptom of disease and the medicinal treatment of conditions attended by this symptom, and more especially of certain types of disease in which glycosuria is apt to occur. I can not accept the statement that we know nothing about the cause of this symptom. It is the office of the physician to investigate the etiologic factors of each individual case presenting itself for treatment. Routine treatment in glycosuric conditions is certainly unscientific and often injurious. To treat every case of glycosuria like diabetes is a very easy thing, but it is not the proper procedure. In a large proportion of cases of non-diabetic glycosuria, perhaps in over 90 per cent. the causes of the glycosuric symptom can be ascertained and with the knowledge of the cause to guide us, it may be successfully treated. While we know very little as to the causative factors of diabetes itself, we know a good deal about the various types of glycosuria and the conditions underlying the appearance of the glycosuric phenomenon. In reply to the question as to the frequency of diabetes in negroes, some years ago I studied and arranged the records relating to vital statistics in the city of New York, and found that in a period of eleven years prior to 1900 there had been reported fifteen cases of diabetes that had ended fatally in negroes. One of the cases of Graves' disease, accompanied by glycosuria, which I reported before the Section on Practice of Medicine, occurred in a negress. So that, while it is unusual to find grave conditions attended by glycosuria in the negro, such cases are occasionally observed.

Among the remedies considered in my communication I only included such as I have personally found to be efficacious in the treatment of the glycosuric symptom. I purposely omitted all those so-called remedies which, after continued and repeated trials, I have found valueless in ameliorating the output of urinary glucose. In answer to Dr. Wood's question, I have no definite results to report from the use of methylene-blue. I have used the chemical not very frequently and only reluctantly. Still, in those cases in which I have employed it, it was continued for protracted periods and the cases were kept under close observation. Ergot has rendered me good service in a number of instances. Its action is especially marked in cases characterized by pronounced polyuria. It influences the circulation of the brain and hence is indicated when the cause of the glycosuria is within the brain and when it seems necessary to produce an artificial anemia there. It is also of decided influence in cases depending on or concurring with cardiac hypertrophy.

Now as regards the form of carbohydrates to be allowed in the diet. I did not speak on the dietary treatment of either diabetes or glycosuria. This is a chapter of itself, and a very long chapter at that. I pointed out that dietetic treatment is not always indicated in the various non-diabetic glycosurias. The question of carbohydrates, therefore, could only be of importance in non-diabetic glycosurias, if the patient was also afflicted with a gastric disturbance demanding for a time the exclusion of starchy or saccharin material. The question was raised as to the tolerance of potatoes by the diabetic organism. A French clinician was the one who first introduced the potato

diet. I have allowed the use of potatoes in a number of patients. Certain patients, it is true, tolerated the potatoes very well, but it must not be forgotten that at least the same proportion of diabetic persons tolerate other forms of starchy food if taken in moderation and that there exists a great number of diabetics who can partake of large quantities of milk with impunity. I do not consider the potassium salts contained in the potatoes to be of any advantage, for if they were, potassium as such or any of its salts should have proved of benefit in the treatment of the diabetic or glycosuric conditions. This is plainly not the case. In comparing potatoes with other forms of carbohydrate food, it should be remembered that, in the first place, potatoes contain very small amounts of solid material, therefore also of starch, in proportion to their bulk. This is one reason why their employment may be less objectionable than that of bread. They are bulky; in one hundred grams of potatoes but twenty-one grams of carbohydrate matter are contained, while in the same amount of wheaten or rye flour from 60 to 90 grams of carbohydrates are found. To obtain the same caloric value about four times as much of potatoes as of flour or bread must be consumed. The potato diet may satisfy a patient, but he has taken very little starch and a great deal of water. In the way of substitutes for bread I have advised the preparation of peanut flour and bread and cakes baked therefrom. As a general rule, however, I find that most patients get along with little or no bread.

I am no advocate of bread substitutes; the dietetic treatment is essential in diabetes. Combined with a medicinal treatment, dietary regulations may be very beneficial in the various forms of glycosuria, but a majority of instances of glycosuria do not ask for an antidiabetic regimen.

SOME RARE FORMS OF CHRONIC PERITONITIS

ASSOCIATED WITH PRODUCTIVE FIBROSIS AND HYALINE DEGENERATION.*

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In the discussion of the subject of peritonitis an element of confusion has been introduced owing to the loose way in which certain descriptive terms have been used. A confusion in the nomenclature leads inevitably to a confusion of ideas. We find that many writers of repute use terms such as "peritonitis," "perihepatitis" and "perisplenitis" to designate a condition in which fibrous bands of adhesion connect the various viscera or traverse serous cavities, even in the absence of any sign of accompanying active inflammation. While, of course, such adhesions are an evidence of an inflammatory process, they are the result of such a process rather than the process itself. Now a result can not be the cause; scar-tissue is not the wound, nor are fibrous adhesions inflammation. It is obviously then incorrect and misleading to use a term like peritonitis to designate such a condition. We should prefer to restrict the term to those cases in which inflammation is actually in progress at the time of observation, since fibrous adhesions may be merely evidence of an inflammatory process long since past and gone. There are cases, however, where adhesions occur with the addition of changes due to an associated active process, with certain forms of which I propose to deal.

In the course of the present communication I desire more especially to call attention to a peculiar form of chronic peritonitis of progressive development, several instances of which have come under my notice recently

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. A. Stengel, W. S. Hall and L. Heektoen.

that is of considerable interest and importance. While from the point of view of etiology several varieties must be recognized, anatomically speaking they have much in common; in many there is more or less exudation of a sero-fibrinous or fibrino-purulent character, while adhesions, plastic and fibrous, are common. The feature, however, that gives the affection its characteristic form is a peculiar overgrowth of fibrous tissue on the peritoneal membrane and the surfaces of the abdominal viscera leading to induration and deformity. This fibrous tissue undergoes hyaline transformation so that plaques or continuous sheets of pearly-white cartilaginous appearance are produced in various parts. The material in question has every feature of newly-formed tissue, and the disease is both chronic and progressive. Shrinkage of the fibrous tissue takes place, hence one might correctly speak of the disease as a chronic "indurative" peritonitis.

The process when diffuse is usually most marked about the upper part of the peritoneal cavity, the capsules of the liver and spleen, the mesentery and the great omentum, and may even extend to the pleural and pericardial cavities. Although not new, the subject is one that has attracted but little attention in proportion to its importance. Cases of this kind usually come under the notice of the clinician with ascites, slight abdominal pain, alteration in the size of the liver and slight anasarca, so that at first sight there is a considerable resemblance to cirrhosis of the liver. These cases are so remarkable and differ so much from the ordinary chronic peritonitis that their exact relationship is not at first sight apprehended.

A brief reference, in passing, to the forms of peritonitis may not be out of place at this point, since it will render plainer what is to come. All peritonitides may be divided into primary and secondary forms. A primary peritonitis is defined by Flexner¹ to be "a condition in which the inflammation, usually diffuse, of the serous cavity takes place without the mediation of any of its contained organs, and independently of any surgical operation on its parts." As Flexner correctly points out, these are usually due to terminal infection. From their nature it is obvious that they can not lead to the chronic disease and so may be dismissed at once from our consideration. Chronic peritonitis may be developed from an originally acute disease, either by a succession of relapses or a gradual amelioration in the severity of the attack, or it may develop insidiously from the first. A point of some importance in chronic peritonitis, even if it subsequently become generalized, is that, with the exception of those cases dependent on ascites or secondary infection, it is practically always local at the beginning and is in almost every case secondary to disease of one of the abdominal viscera. Careful examination in these cases will show that the vast majority of instances arise by the extension of disease from some organ in close anatomic relation to the peritoneal membrane. The ways in which this may occur are multitudinous, but the more important may be mentioned—gastric or intestinal ulcers, cholecystitis, pericholecystitis, traumatism, abscess or gumma of the liver, inflammations of the internal female genitalia, hernia, tuberculosis and carcinoma, echinococcus cysts.

THE VARIETIES OF PERITONITIS.

In many cases it is not uncommon to find local inflammation with adhesion of the adjacent surfaces, but a certain percentage of these will go on to a wide dissemination: we have, therefore, to recognize both local

and diffuse forms. Why a local process of this nature should persistently spread is not very clear. The answer is perhaps to be found in the nature of the initial lesion which is usually of a type not amenable to ordinary medicinal measures, while it usually occurs in some part where there is continuous mechanical irritation incident to the functioning of the parts affected. Probably, too, the germs at work are of relatively low virulence and adhesions form which tend to inhibit the activity of the process, and thus convert what would otherwise be an acute process into a slowly progressive one. Dissemination of the infective agent takes place through the lymph system rather than by direct extension over the peritoneal surface. According to the nature of the exudation produced we can conveniently divide chronic peritonitis (diffuse) into three main forms:

1. *Chronic Exudative Peritonitis*, in which there is a considerable outpouring of serous, sero-fibrinous or fibrino-purulent fluid, with loose plastic adhesions; fibrous bands are few or absent.

2. *Chronic Exudative and Adhesive Peritonitis*, presenting less exudation, but with somewhat numerous and firm adhesions, often leading to sacculization of the contents.

3. *Chronic Hyperplastic Peritonitis*, in which there is sero-fibrinous or fibrino-purulent exudation, but more or less generalized adhesions are the rule, together with the formation of firm nodules or continuous sheets of hyaline fibrous tissue.

Many points of interest tempt us to discussion, but in the present paper we are principally concerned with the third form:

CHRONIC HYPERPLASTIC PERITONITIS.

In entering on a consideration of this affection it may be said at the outset that this form is much rarer than either of the other two. Many cases are merely of pathologic interest, since they are only discovered incidentally at autopsy, but some few, owing to the extent of the lesions and their localization to special organs, are susceptible of diagnosis during life, and hence are of clinical importance. Anatomically speaking, the cardinal features of the disease are the production of more or less exudation into the abdominal cavity and the production of fibrosis leading to the formation of sporadic elevated nodules on the peritoneal surface or to a continuous fibrous membrane of considerable thickness and cartilaginous texture on the various viscera.

Judging from a careful review of the literature, cases of this kind are not very common, but this, I think, is possibly due to the fact that attention has not been sufficiently drawn to the possibility of their occurrence. As an illustration of the early stage in the process I may refer briefly to the following case coming under my own notice at the Royal Victoria Hospital:

CASE 1.—Male, aged 80, gave a history of intestinal disturbance in the epigastrium, pain after eating, epigastric tenderness, occasional vomiting and progressive emaciation. When admitted to the wards free fluid was found in the abdominal cavity, with tenderness and resistance in the epigastrium, and to a less extent over the ileocecal region.

Autopsy.—The gall bladder contained calculi and was shrunken, with greatly thickened walls. On the under surface of the diaphragm were numerous pearly nodules of hyaline, translucent appearance, which microscopically were composed of laminated fibrous tissue with hyaline degeneration. The great omentum was converted into a fibrous cord, and the spleen was tied up in fibrous adhesions. Between the coils

of the intestines were numerous plastic and some firmer adhesions, with pockets of fibrino-purulent fluid. A glassy avascular membrane of new formation covered over the whole front of the abdominal cavity, through which the intestines could be indistinctly made out.

Here, no doubt, the exciting cause of the peritonitis was cholelithiasis with cholecystitis and pericholecystitis. A very similar case has been recorded by Hübner, Sr.,² in a woman of 56, who suffered from repeated attacks of biliary colic and jaundice followed by ascites. Death ensued after ten years, and at autopsy cholecystitis was found, the peritoneum over the anterior abdominal wall was thickened and the liver covered by a thick membrane of porcelain-like appearance; a local purulent peritonitis was also present. Here the lesion was more diffuse than in my own case, but in both we have a chronic diffuse peritonitis of the peculiar type in question, clearly originating in a local inflammatory lesion.

Some of these cases appear to be due to trauma, as in an instance related by Henoch,³ where a little girl was kicked in the region of the liver and some weeks later developed enormous ascites. At autopsy an extensive hemorrhagic and hyperplastic peritonitis was discovered, together with bruising and laceration of the liver. Von Wunsheim⁴ records a similar case apparently of a different origin, in a man of 43, who had suffered for four years with palpitation of the heart and ascites. At autopsy there was ascites and the peritoneum was greatly thickened and of pearly-white appearance. A large aortic aneurism had ruptured into the right auricle, and in addition to the chronic peritonitis there was contraction of the aortic valves, chronic Bright's disease and passive congestion of the organs. Von Wunsheim's case suggests strongly that the determining factor in the production of the peritonitis was the vascular disturbance and transudation induced by the heart lesion.

Both Rokitsansky⁵ and Ziegler⁶ state that local thickenings of the peritoneum may arise from the irritation of a simple ascites. But after a careful investigation into this point I have not been able to satisfy myself that a diffuse thickening of the membrane of the type referred to occurs from this cause. It is well known how frequently an acute peritonitis complicates those diseases associated with ascites, such as cirrhosis of the liver and Bright's disease, but as yet it has not been made clear in how far this event is due to secondary infection rather than to the simple mechanical irritation of fluid. I am inclined to think myself that in every case infection is at work. It is probable, however, that passive congestion of the organ may lead to a local thickening of the peritoneum covering it. Taking the spleen, for instance, in 467 postmortems of which I have notes, fibro-hyaline plaques were found on the capsule 17 times, and the most important single causative factor was passive congestion. This view is also held by Eichhorst.⁷ In my experience, however, in cases of passive congestion the hyaline thickening remains strictly local. So far as I can see from a careful study of this form of peritonitis the most important factor is the extension of an inflammatory process from some one of the contained viscera. I have been led to this conclusion from a consideration of the etiology, the clinical course of the disease and a careful study of the exudation and the thickened membrane produced.

In another class of cases the peritoneum is affected together with other serous membranes. In a recent study of this form,⁸ for which I have proposed the term "Multiple Progressive Hyaloserositis," I have been able to collect 14 instances, and several more are now re-

corded. (See A. O. J. Kelly.¹⁷) As a rule the pericardium, the pleurae and the upper part of the peritoneal membrane are the parts affected, although variations occur. About half the cases seem to have started from some lesion of the abdominal viscera, frequently a perihepatitis secondary to some inflammatory affection of the liver. One case apparently started from a duodenal ulcer. Next to this the most important association is a chronic indurative mediastino-pericarditis extending secondarily to the peritoneal cavity. More rarely still chronic pleurisy is an exciting cause. In such cases extension of the inflammatory agents takes place by means of the lymphatics of the various cavities which have free communication. The most important form of this type is chronic perihepatitis, to which Curschmann⁹ has drawn attention under the name of "Zuckergussleber," or "icing liver." Chronic perihepatitis is almost invariably associated with chronic peritonitis, although the converse proposition by no means holds good. Clinically, the most striking symptoms are, general weakness, shortness of breath and a gradual increasing and refractory ascites; jaundice is uncommon in uncomplicated cases. The resemblance to atrophic cirrhosis of the liver is striking, but differential diagnosis is possible. In the form beginning with peritonitis and perihepatitis the leading features are ascites, which tends to return after repeated paracentesis; the liver is at first enlarged and later small, smooth and hard. Later, pleural effusion or adhesions may form, particularly on the right side, and later still a similar involvement of the pericardium leading to cardiac insufficiency.

The disease may begin acutely with fever, rigors, pain in the epigastrium and tenderness in the hepatic region. Other cases develop insidiously and do not come under observation until the ascites is well marked. The spleen is usually enlarged. A case of this type is the following, which I have had an opportunity of studying fully:

CASE 2.—A woman, aged 48, had been ill for some two years with weakness, dyspnea, palpitation of the heart, and extreme anasarca.

Autopsy.—The abdomen contained 6000 c.cm. of straw-colored fluid clotting readily; there were fibrous adhesions between the great omentum and the uterus and left ovary, and between the coils of the intestines. The great omentum was contracted into a firm fibrous mass, the mesentery thickened and greatly shortened.

A striking feature was that in the upper part of the abdominal cavity, particularly the capsules of the liver and spleen, the serous membrane was greatly thickened and of pearly-white gelatinous appearance. Both pleural sacs were obliterated and the pleural membrane showed the same peculiar metamorphosis. The two layers of the pericardium were universally adherent by fibrous adhesions.

Microscopic Examination.—This showed that the material referred to was an organizing inflammatory deposit, the main features of which were hyperplasia of fibrous tissue with consecutive hyaline degeneration.

While, as has been mentioned, most of such cases hitherto reported have originated in the peritoneal cavity, in others the peritonitis arose by extension from the pericardium or pleurae. In cases of hyperplastic peritonitis such as has just been described it is difficult, in the light of our present knowledge, to assign the exact cause. In most there is a history of acute infection of various kinds, such as acute hepatitis, cholecystitis and pericholecystitis, typhoid fever, perityphlitis and the like, and it is probable in these cases that we are dealing with an infection by micro-organisms of relatively low virulence, so that for a considerable length of time the

tissues of the body are able to resist the inroads of the disease, and thus the fatal termination is almost indefinitely prolonged.

Much interest attaches to the question: What part does tuberculosis play in this form of peritonitis? Louis¹⁰ held that every case of chronic peritonitis was tubercular. But this is certainly incorrect: It is probably true that the majority of cases are tubercular, but numerous exceptions occur, as the above recorded cases sufficiently prove, for in none of them was the *Bacillus tuberculosis* discovered, although search was made for it. It is quite possible, however, for the tubercle bacillus to produce a hyaline and productive fibrosis of the peritoneal membrane, quite comparable to the simple form previously described. This fact has been but little recognized up to the present. Within recent years numerous observations have been made tending to show that tuberculosis of the serous membranes and of the various organs is not necessarily a destructive process, but is, on the contrary, occasionally a constructive one; caseation may be slight or absent while fibrous hyperplasia is in excess. Such hyperplastic tuberculosis, or "pseudoneoplastic growth," has been met with in the larynx, where it has been mistaken for carcinoma.

Analogous to this is that peculiar form of lymphadenitis, which clinically may be taken for Hodgkin's disease, until the discovery of the specific bacillus reveals the true nature of the case. Why the disease should take this form is difficult to say, unless it be, as Lartigau has suggested, that we are dealing with a bacillus of very low virulence. It is possible, too, that bacilli from other than human sources may be at work. The following case will illustrate the hyperplastic type of tubercular peritonitis:

CASE 3.—A male, aged 37; five months before coming under observation noticed that he was losing flesh and his appetite was failing. Two months before admission the abdomen was noted to be hard and somewhat distended; there was neither tenderness nor vomiting and the bowels were regular. Three days before admission he was seized with severe pain in the left hypochondriac region which gradually became generalized. On admission he was found to be greatly emaciated and cachectic with great abdominal distension and rigidity of the abdominal walls. A friction rub was detected over the left base anteriorly and there was slight cough; irregular areas of dullness were noted over the abdomen. The diagnosis was probably tubercular peritonitis with perforation and acute septic peritonitis.

Autopsy.—There was found sero-fibrinous pleurisy on the left side and scattered tubercles were present on the left pleura and diaphragm. A few older tubercles were found in the right lung and peribronchial glands. The main interest centered in the condition of the peritoneum. The abdominal cavity contained fecal material and gas due to perforation of the ileum; some chronic fibroid tuberculosis was found matting together the intestines. The liver capsule was greatly thickened, covered with shaggy adhesions and showed some hyaline degeneration; the liver was adherent to the diaphragm. The spleen was also adherent to the diaphragm and its capsule showed hyperplastic pearly thickening. Microscopically this consisted of a laminated deposit of connective tissue with marked hyaline metamorphosis. Small isolated tubercles on the surface of the intestines presented an identical structure. The capsule of the liver showed much less hyaline change, but contained numerous caseous foci; the great omentum was not detected; tubercle bacilli were demonstrated in the capsule of the liver.

Here the thickening of the peritoneum was very similar to the hyaline change in the simple form of inflammation and at first sight might be mistaken for it, but the main difference is that, to some extent, areas

of caseation were superadded. In the hyperplastic tubercular peritonitis the ascites is not likely to be so great as in the simple form, and may indeed be absent, while fibrous bands of adhesion are more numerous. So far as the distribution of the lesions is concerned the disease is strictly comparable to the non-tubercular form, for in both we may have small isolated nodules scattered over the peritoneum, or thick sheets of hyperplastic material. The two forms present an additional similarity in that the process is not necessarily confined to the peritoneum, but may extend to the pleuræ and pericardium. I have met with two cases of this type, and Strajesko¹¹ has recorded a case which is important, since it proves that the multiple involvement of the serous membranes of Curschmann's "icing-liver" type may be due to tuberculosis, a fact which was hitherto unknown. A similar case has been recorded in this country by Herrick.¹⁸

I would like here to emphasize the similarity in appearance between the simple and the tubercular forms of hyperplastic peritonitis. Many of these cases come to operation and confusion is liable to arise. It is not likely that the tubercular form will be mistaken for the non-tubercular, but I am convinced that the reverse not infrequently occurs; particularly when isolated fibrous nodules are seen upon the surface of the intestines or about the liver and diaphragm is the case likely to be regarded as tubercular. As in the tubercular form the mere fact of opening the abdomen seems, to some extent, to mitigate the process, and it is not unlikely that many of the so-called cures of "tuberculous peritonitis" have occurred in this type of case. The resemblance between the two forms may be so striking that only a microscopic examination of the nodules with the demonstration of the presence or absence of the tubercle bacilli will reveal the true nature of the case.

Another type of chronic hyperplastic peritonitis of tubercular origin is of great practical importance. I refer to a more or less localized form in which a tumor-like mass is produced. The great omentum may be matted into an irregular lump, or the process may be most marked in some part of the intestinal tract, notably about the appendix and cecum. In other cases the small and the large intestines have been found contracted into a ball. This form is liable to be mistaken for carcinoma. Lartigau¹² has collected the literature on this subject. It is important to recognize this variety, for many cases are amenable to operation and of course the prognosis is very much better than in the case of carcinoma. In a case reported by Lartigau of a very peculiar form of hyperplasia without caseation, the disease was proved to be tubercular, and was entirely confined to the wall of the bowel without accompanying peritonitis. Extensive peritoneal adhesions may, however, form about a similar tubercular mass involving the cecum, as in a case reported by Koerte.¹³ In other cases the great omentum has been involved as well, as shown by Routier¹⁴ and Tédénat.¹⁵ While these cases are examples of a local or sporadic distribution, they are undoubtedly etiologically of the same nature as the diffuse form with effusion, for the *Bacillus tuberculosis* has been detected in the hyperplastic tissue.

It is important to recognize the existence of this peculiar form since in the early stages it is perfectly amenable to operative measures, while if allowed to go on the process spreads, extensive adhesions form, and it becomes impossible to remove the mass. I believe

that in all cases of tumor-formation about the ileocecal region or in the mid portion of the abdominal cavity an exploratory laparotomy is justifiable, for if a too ready diagnosis of carcinoma be made and the patient left alone he is nearly always condemned to death by intestinal obstruction or dissemination of the tubercular process, while in suitable cases operation may be followed by complete cure.

A third form of hyperplastic peritonitis is that associated with carcinoma. It is, of course, well recognized that sero-fibrinous or fibrino-purulent peritonitis may arise as a complication of carcinoma of the peritoneum, but, so far as I am aware, scarcely any attention has been given to the hyperplastic form in this connection. Nothnagel¹⁶ refers to an indurative and deforming peritonitis as occasionally met with, but I have been unable to find any extended references to that particular type associated with hyaline degeneration. The cases afford great similarity to those already described, for there is a chronic course, more or less cachexia and ascites, with the formation of nodular masses in the abdominal cavity. One such instance came under my notice recently:

CASE 4.—Male, aged 46; alcoholic and syphilitic; for three or four years had been complaining of palpitation of the heart and oppression in the chest. Three weeks before being admitted to the Royal Victoria Hospital he noticed swelling of the abdomen and of the left leg. On admission the abdomen was tense and greatly distended, with evidence of fluid. The appetite was poor and there was tendency to constipation. He suddenly developed pain in the abdomen and died in a few moments.

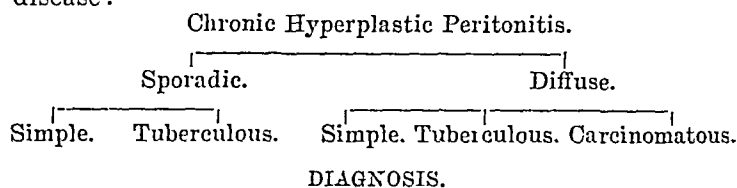
Autopsy.—A very singular condition of things was found at autopsy. The peritoneal cavity contained 4300 c.cm. of straw-colored fluid with flakes; the mesentery was shortened, thickened and pearly in appearance; the great omentum was much contracted and contained a number of firm nodules about the size of walnuts and of a yellowish color, with some congestion of the capillaries on the surface, and lay in close contact with the stomach as a firm nodular cord extending across the abdomen midway between the xiphoid and the umbilicus; the parietal peritoneum was thickened, especially in the upper part of the cavity and was of a pearly-white, hyaline appearance, presenting a multitude of shallow depressions or pits. In other parts where the hyaline change was not so diffuse it formed tree-like masses about the vessels. Here and there on the intestines were small flat pearly nodules. Similar nodules were seen on the suspensory ligament of the liver and on the under surface of the diaphragm. Along the mesenteric attachment of the descending colon were numerous nodular growths identical with those in the great omentum. The stomach was contracted and its wall hypertrophied. On the lesser curvature posteriorly near the cardia was a chronic cancerous ulcer. There was some hyaline thickening of the liver capsule, especially near the gall bladder. On the surface of the spleen were scattered thin fibroid plaques of pearly-white hyaline appearance.

Microscopic Examination.—This showed that the peritoneal membrane presented proliferation of fibrous tissue with hyaline change. The primary condition was a scirrhus cancer of the stomach extending into the peritoneum; the nodules in the great omentum and mesentery were scirrhus cancer, as were also the hyaline-looking plaques on the surface of the intestines. It is singular that there were no metastatic deposits in the viscera, but instead a diffuse dissemination of carcinoma throughout the peritoneum. Death ensued from pulmonary infarct due to a loosened thrombus of the left iliac vein.

The exact nature of the peritonitis which complicates carcinoma is as yet obscure. The more acute and the subacute forms in some cases are due to perforation of cancerous ulcers in the hollow viscera or to secondary infection of the cancer-mass and its neighborhood. The hyperplastic form may possibly depend on infection with microorganisms of low virulence, but it is debatable

how far the overgrowth of tissue is dependent on inflammation. It is more probable that, in addition to an inflammatory process, we have diffuse carcinosis leading to marked proliferation of fibrous tissue, such as is usually the case in the scirrhus variety. The combination of inflammation with neoplasia would exactly reproduce the picture of hyperplastic peritonitis. In the case in question the ascites resembled an inflammatory exudate rather than a transudate, and, in fact, no condition was found at autopsy which could have brought about obstruction, either in the portal system or in the inferior vena cava. I am strongly inclined to think that a secondary infection of the peritoneal cavity had taken place, possibly from the carcinomatous ulcer of the stomach. Until more cases are studied, however, many of these questions can not be settled definitely.

From a consideration of the foregoing cases I would suggest the following as a suitable classification for the disease:



DIAGNOSIS.

In conclusion a few words as to diagnosis may be given. The local forms of hyperplastic peritonitis, with the single exception of that form affecting the cecum or other parts of the intestinal tract, give rise to no manifestations that suggest their presence. The discovery of a large nodular mass in the neighborhood of the cecum of very chronic development and without marked signs of cachexia should always suggest tuberculous hyperplastic peritonitis, or at least involvement of the intestinal wall. When the process is diffuse four diseases come specially into mind: (1) simple chronic hyperplastic peritonitis, (2) tubercular peritonitis, (3) cirrhosis of the liver, and (4) carcinoma of the peritoneum, since in all there may be ascites, with abdominal pain and in most the formation of nodular tumors in the abdomen. Simple chronic hyperplastic peritonitis may be suspected if there be extreme ascites, and little or no anasarca, especially if with these signs there are evidences of an adherent pericardium or right pleura. A history of previous infective disease, gastric or intestinal ulcers, gallstones, will be suggestive of this condition.

The clinical picture is often dominated by signs of adherent pericardium or perihepatitis, and, in fact, unless perihepatitis be present the disease can probably not be diagnosed. Portal congestion is absent and there is no marked disturbance of digestion, no hematemesis nor melena; jaundice does not occur unless gallstones be present. The liver may be enlarged or small, but is rarely warty. In the tubercular form the ascites is not so great and the fluid is more apt to be sacculated, while abdominal pain and tenderness are more marked. Pigmentation of the skin has been observed. Careful examination should be made of the lungs, glands, testes, ovaries and fallopian tubes for evidence of a primary tubercular focus. The disease is more common in females than is the simple form. The distension of the abdomen is often uneven, owing to the irregular dilatation of the intestines. A hemorrhagic exudate is more in favor of tuberculosis or carcinoma than the simple peritonitis. Hectic fever is not uncommon, but cases may run without fever and intestinal symptoms may be in the background. Tuberculin injections may be tried in suitable cases. In cirrhosis of

the liver, dyspeptic disorders, alcoholism or syphilis are prominent etiological factors; portal stasis is marked; nausea, vomiting, hematemesis, melena and the various signs of portal obstruction differentiate this form from the "icing-liver" type of Curschmann. The great omentum is never nodular, as in the form of chronic peritonitis. Jaundice occurs in 27 per cent. of cases; the liver may sometimes be felt to be warty. Cerebral manifestations are not uncommon. As Hale White¹⁰ has pointed out, when tapping becomes necessary the patient rarely lives long. On the contrary, in simple hyaloseritis the abdomen may be tapped a great number of times and the patients may live for years in comparative comfort.

In carcinoma the patient is usually advanced in years and cachexia is marked. Careful examination of the stomach and, in the female, the ovaries should be made; a hemorrhagic or chylous or pseudo-chylous ascites is in favor of carcinoma. The hemorrhagic exudate is somewhat less frequent in the tubercular form. It is doubtful whether the presence of peritonitis, unless of the perforative variety, can be diagnosed with certainty when complicating peritoneal carcinoma. Abdominal pain and tenderness might in some cases suggest it or the presence of a friction rub. In carcinoma the disease is fairly rapid.

TREATMENT.

Complications or special symptoms may call for appropriate remedies, but the treatment is essentially surgical. It has long been known that tuberculosis of the peritoneum has been apt to disappear after abdominal section, and indeed without it, and a simple hyperplastic peritonitis has been occasionally benefited by this procedure. Especially in the form of hyperplastic tuberculosis localized to the cecal region resection of the affected part may result in complete cure. Operation in some cases may be called upon to relieve obstruction.

For the simple form, tapping is usually necessary at increasingly frequent intervals. With regard to medicinal measures, diuretics, especially caffeine, have been recommended in the hope of diminishing the ascites. The patients should be kept in the best hygienic surroundings.

In the carcinomatous peritonitis the outlook is, of course, hopeless.

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DISCUSSION.

Dr. W. M. WELCH, Baltimore—Dr. Nicholls' description and classification of these interesting forms of chronic peritonitis are most commendable. I have been interested in a number of the forms which he describes, especially in the diffuse chronic thickenings of the peritoneum associated sometimes with carcinoma, particularly with cancer of the stomach and of the ovaries. In some of these cases the fibrous thickening is limited to the wall of the stomach, in others it may affect a

large part of the peritoneum. It may be impossible to recognize the existence of cancer in some of these cases without careful microscopic examination. There may be no circumscribed tumor, no ulceration of a mucous surface, and the nests of cancer cells may be relatively small and far apart. The disease may present itself to the naked eye as simply a diffuse fibroid thickening of the gastric and intestinal walls, with perhaps similar thickening of the peritoneum elsewhere. Both simple and colloid types of carcinoma may appear under this form.

There is another condition to which I should like to call attention in this connection, namely, the occurrence of richly vascularized, thin layers of new connective tissue, particularly on the pelvic peritoneum, associated with small hemorrhages and blood pigment. This condition is analogous to chronic hemorrhagic pachymeningitis, the morbid process being of the same general nature in both affections.

The chronic proliferative forms of peritonitis associated with tuberculosis are, of course, well recognized. There occur, as Dr. Nicholls has pointed out, diffuse or more circumscribed forms of peritoneal fibrosis, especially about the liver, but also over the spleen, the under surface of the diaphragm, and elsewhere, the etiology of which is very obscure.

Dr. E. R. LECOUNT, Chicago—I have met several cases. One of them had to do with a liver which was encased in a shell, resembling that of a coconut, from which the liver could easily be lifted out; the capsule then maintained its former shape when laid on a flat surface.

I think Dr. Nicholls is to be complimented in his arrangement of these diseases, and for not becoming entangled in the subject of "pseudo-cirrhosis."

Dr. A. G. NICHOLLS, Montreal—The reference made to pachymeningitis, by Dr. Welch, as a disease having some of the anatomic peculiarities of this *zuckerguss* condition, is interesting, and I am of the opinion, as he is, that there is a close analogy between this disease and what may be termed "pachy-peritonitis." Cases such as I have described are not entirely new and the only point on which I would claim novelty is in the recognition of the fact, which has not been brought out before, that the *zuckerguss* form of peritonitis has at least a threefold etiology—simple, tubercular and carcinomatous.

THE GROWTH OF THE TUBERCLE BACILLUS AND ORGANISMS RESEMBLING IT ON FRUITS AND VEGETABLES.*

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At one time the tubercle bacillus was looked on as standing in a class by itself, sharply differentiated from all other micro-organisms, but not long after its recognition two important points came to light; first, that there are other organisms, especially the streptothricæ, that have the power of producing lesions resembling the tuberculous granulomata; and secondly, that there are other organisms resembling the tubercle bacillus in some of its biologic and staining characteristics.

The fact that the tubercle bacillus stains with difficulty and decolorizes with corresponding difficulty was for a long time regarded as peculiar to this organism. This staining peculiarity was looked on as a definite and final test, quite as specific as a chemical reaction. But now we know a whole group of acid-proof bacteria widely distributed in Nature, that resemble the tubercle bacillus closely enough in certain features to cause confusion and errors in diagnosis. These organisms are found in butter, milk, on grass, in manure, and even in certain lesions in the body.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. Alfred Stengel, L. Hektoen and Winfield S. Hall.

They have been found, for instance, in an ovarian cyst and in the nasal secretion of healthy and diseased mucous membranes; also in sputum. They stain with carbol-fuchsin exactly similar to the tubercle bacillus and resist the decolorizing action of alcohol and acids, that is to say, they are acid-proof.

While these bacteria may readily be distinguished from the true tubercle bacillus by their cultural characteristics or by their pathogenic action in animals, it may readily be seen how they have been the source of error in diagnosis and how they have further complicated the difficult problems of tuberculosis. Some of these organisms stain and decolorize more readily than others. That is to say, they do not all have the same high degree of acid-proof qualities presented by the tubercle bacillus itself. Therefore this also causes confusion in the study of leprosy, especially in staining the *Bacillus lepræ* in nasal secretions.

We can no longer make a scientific diagnosis of tuberculosis by simply staining the bacilli in the sputum, although for clinical purposes this method remains useful. It is necessary to isolate the organism in pure culture and study its pathogenic action on animals. This takes a long time, often a matter of weeks and months.

Therefore, the problem confronts us of finding a media on which the tubercle bacillus will grow quickly in order to save time, and thereby render the process of cultivation a practical one for clinical work.

Of the various media tested we have so far had best success with certain vegetables and fruits. While this work which I am now presenting to you is not yet completed, I am at present able to state that there are vegetables on which the tubercle bacillus grows quite as well, if not better, than on potato. Beet and cauliflower seem especially favorable. Sometimes the growth appears more quickly on these vegetables than on potato.

A good growth of the human variety has been obtained on the following: potato, cabbage, cauliflower, turnip, carrot, squash, celery, egg plant, beet and radish, and a small or doubtful growth on apple, onion, coconut and pineapple.

It is nothing new to grow micro-organisms on vegetable media, although I have not heard of anyone growing the tubercle bacillus on the various substances mentioned, except potato.

For comparison with the tubercle bacillus, I herewith present for your consideration growths on the same fruits and vegetables, of avian tuberculosis, bovine tuberculosis, Karlinski's bacillus of nasal secretion, Rabinovitch's bacillus of butter and margarine, and Moeller's grass bacillus. These growths present a very suggestive picture. We seem to have here a tubercle group, just as we have a colon group. There is a very considerable difference between the extremes of this tubercle group, also several remarkable points of resemblance. If the tubercle bacillus of man has been specialized by a process of evolution from the more lowly grass bacillus of Moeller, or if the grass bacillus is a degenerate saprophytic form of the tubercle bacillus there are several missing links between the two. The saprophytic acid-proof organisms resembling the human tubercle bacillus grow readily on the ordinary media used in the laboratory, both at room temperature and in the incubator. A visible growth is often obtained overnight. They also have more color than the tubercle bacillus, usually a salmon-red or yellowish tint. The human tubercle bacillus grows as a crinkled, rugous, dry, mould-like mass. Some of the cultures of the acid-

proof organisms resembling the human bacillus have a dry, corrugated growth on various fruits and vegetables which is very suggestive.

These few remarks are only given with the specimens herewith presented as a preliminary note of the work now being done on this group of micro-organisms in the hygienic laboratory of the Marine-Hospital Service, and a further report will be made at a later date.

DISCUSSION.

DR. JOSEPH McFARLAND, Philadelphia—Did the growth take place in direct proportion to the amount of sugar these vegetables contained?

DR. C. A. SMITH, Atlanta, Ga.—How does Dr. Rosenau prepare his media?

DR. M. J. ROSENAU, Washington, D. C.—The media are prepared just as we prepare potatoes as a culture medium in test tubes. With an apple corer I cut out a solid plug of the fruit or vegetable, this cylinder is cut in two and each half is placed in a test tube in the bottom of which is some 5 per cent. glycerin bouillon. This is then sterilized fractionally on a number of successive days. Those we prepared to keep through the winter were saturated with glycerin bouillon by filling the test tube almost full, and when we are ready to use the media we pour off the excess of fluid, leaving only enough at the bottom to keep the vegetable moist.

As to the relation between the amount of sugar in the different vegetables and the growth obtained thereon, this is a very interesting feature. I have not gone into this at all yet, but am doing so from another standpoint and hope to be able to say more about it another time.

THE DIAGNOSIS OF BRAIN ABSCESES.*

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We encounter difficulty in diagnosing brain abscesses in two ways: First, in determining whether or not an abscess is present, and in the second place, in locating it. These difficulties are entirely out of proportion to the difficulty found in diagnosing other brain lesions, say, for instance, tumors and cysts. In the former condition the symptoms are not only frequently obscure and indefinite, but for a considerable period may be absent altogether; the abscess may be in a latent state. In tumors and cysts time is not of such very great importance, a few days or a few weeks may elapse and the diagnostic points may be allowed to develop themselves, without there being any added perils to the patient. In abscess, however, time is of great importance, a few days, even twenty-four hours, may determine whether or not the individual's life can be saved. It is in the latent or developmental period of a brain abscess that surgical interference offers the best chances; when the abscess has ruptured and the stage of manifest development has set in, the outcome of the surgical interference is, to say the least, very doubtful. The great problem, therefore, is to be able to diagnose the presence and if possible locate an abscess in its latent period or at least in the very earliest stage of its period of positive manifestation.

In order to bring this subject before the section I am going to cite for you a number of cases which were either operated on or which were suspected of having brain abscesses and in which the subsequent develop-

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Richard Dewey and H. A. Tomlinson.

ment failed to confirm the suspicion. The importance of the subject is manifest and we all are in the predicament very often in just such cases as the following, as to whether we shall advise surgical interference or not. The question is entirely different in brain tumor. In the latter cases the question of surgical interference never arises unless the tumor is located in the cortex, but in every case of abscess we may at least hope that surgical interference can remove the trouble. There are but two solutions to every abscess of the brain, death or surgical interference. Rosl raised a two-fold objection to operations for abscess: 1, The tendency of abscesses to become encapsulated; 2, the difficulty of diagnosis. There can not be any doubt about brain abscesses becoming encapsulated, but we know from clinical experience as well as from the record of autopsies, that the single abscesses, at least, do not remain encapsulated. The same process of softening which is seen around brain tumors and cysts also occurs around the brain abscess, and invariably death results from rupture either into the lateral ventricles or through the cortex. Superficial abscesses on very rare occasions have been known to rupture through the cribriform plate of the ethmoid or the roof of the middle ear, or even through an old fracture, but these fortunate exceptions can not enter into consideration of treatment. The second objection, the difficulty of diagnosis, of course, is valid, but should only urge us to make greater efforts toward the relief of a condition which may offer a favorable surgical outcome. The difficulties are not as great as formerly and at times the diagnosis is even easy.

Given a certain group of signs and symptoms which lead us to suspect the presence of a brain abscess, the first point is the tracing of the source of infection. Bergman says that without the streptococcus pyogenes aureus there can not be a brain abscess. If this is correct then we should at least be able to find the source of infection. Now this is notoriously difficult. Pus-forming organisms always come from without. This is the most important and the first point; with the development of bacteriology the theory of idiopathic abscesses has collapsed.

BERGMAN'S CLASSIFICATION.

According to their origin Bergman divides brain abscesses into four groups, and for the purpose of studying the difficulties in the latent period the consideration of the etiology offers the best results.

1. Traumatic abscesses caused by an open scalp wound or a fractured skull.
2. Those abscesses resulting from a purulent inflammation of bone or bony cavities.
 - (a) Otitic abscesses.
 - (b) Rhinogenetic abscesses.
 - (c) Abscesses due to caries of the bones of the skull.
3. Tubercular abscesses.
4. Metastatic abscesses.

TRAUMATIC ABSCESES.

In traumatic abscesses the most important point to remember is that there must be some direct communication between the cranial cavity and the external world, an open channel through which the infection may travel. It is not necessary to have a fracture of the skull, as Case 1 will illustrate, but an open wound is absolutely necessary. I am well aware of the fact that there are cases on record of abscesses following mere contusions of the scalp, streptococci being brought to the bruised part by the cerebral arteries, but for practical purposes in suspected latent abscesses we should adhere to the fact that there can not be a traumatic abscess without an

open channel of infection. This is usually an open scalp wound that has become infected, but it is not at all uncommon to have an abscess follow a fracture at the base of the skull and then the open channel is by way of the auditory canal, pharynx, or the frontal sinuses. In recent abscesses, following soon after the injury, this will not offer any difficulty, but in latent abscesses occurring weeks or months after an accident this point may be overlooked, especially where the original symptoms and signs of basilar fracture have not been very marked.

CASE 1.—M. R., female, aged 22, single, admitted to the Cincinnati Hospital Jan. 22, 1901. Mental condition such that history was unobtainable. Said to have been struck on the head by a chair on New Year's eve, since which time she has not been well. Further history than this can not be obtained at present time.

Examination.—Temperature, 100.4; pulse, 80; respiration, 20. When not disturbed lies quiet and seems to be somewhat stupid. Easily aroused, and apparently understands everything said to her. Can tell the name of some objects, while she can not of others. Knows the use of some of the objects she can not name. Can write (her name at least) but holds the pen loosely, and seems to have lost the finer movements of the fingers. Can not read, but attempts to spell out the words, calling almost every letter "C" or "R." She is fairly well developed and nourished. Swelling on left side of head above the ear, about three inches in diameter, the most prominent point of which is about two inches from the median line. Fluctuation is easily obtained. Pressure over this area causes a contraction of muscles of same side of face. Pupils moderately dilated, equal and react sluggishly to light. Muscles of eyes not affected. When lying quiet with eyes closed, there is an angle between upper and lower lids of right eye, but when asked to do so, can completely close both eyes. There is no ptosis. With above exceptions there is a right facial paralysis; absence of nasolabial fold, can not whistle or show teeth, saliva drools from right corner of mouth and tongue is apparently protruded to the right. Tongue slightly coated. Lips dry and cracked. Very slight paresis of right arm. Left arm and both legs all right. Reflexes normal. Knee-jerks diminished. Sensation normal (rough test). Babinski's reflex-flexion. Appetite poor. Bowels have moved and she has voided urine since admission. Urine amber, acid, 1018. Blood count: Reds 5,500,000; whites 13,400.

January 25: Temperature range a little lower. Paresis of right arm has increased. Aphasia about same; speaks a few words clearly and distinctly; writes her name and copies letters very well; does not do so well from dictation.

January 26: Is much better this morning; paralysis of face much better; when she laughs the face wrinkles almost equally on both sides; both corners of the mouth retract, but the right drags a little; strength in right arm better; holds pencil very well and writes much better; talks better and seems brighter.

January 27: Aphasia about the same; temperature 97.

January 28: Unchanged; temperature 99.8 last night.

Operation.—The operation was performed by Dr. Ransohoff. Chloroform. A semilunar incision was made in scalp through the fluctuating mass about four or five inches long, convex upward, center just about over the ear. Flap turned down. Upper part of temporal muscle softened and broken down into a nasty-looking granulating mass. No pus found. Cultures in blood serum and bouillon were taken from this mass. There was a small softened area in the skull just over the lower part of the Rolandic fissure, from which bloody serum was oozing. Trephine applied here and button of bone about size of quarter removed. This opening was enlarged by rongeur forceps until about four inches long and three wide. Dura very much thickened, red and injected, as if the site of recent inflammation over an area about 1½ inches in diameter over the lower end of fissure of Rolando. Cultures taken. Incision through dura, and aspirator needle thrust into the brain in various directions. No pus found. Veins somewhat dilated,

dura not sewed. Inner surface of scalp flap curetted and washed with 1-2000 bichl. Strands of silkworm gut passed through from one end of incision to other, for drainage. Scalp sutured with silkworm gut. Dry dressings.

January 29: Seems a little better this morning.

January 30: Aphasia much better, can say many words which she could not before operation. Temperature normal.

January 31: Aphasia still improving; wants to get up; K.I. ordered.

February 1: Aphasia almost entirely gone; sits up in bed; appetite good.

February 2: Improving rapidly; facial paralysis and aphasia nearly gone.

February 4: Head dressed; sutures not removed; no pus or bogginess.

February 12: Second dressing to-day; sutures removed; small drop of pus in lower end of incision; no bogginess; temperature has been up for past 2 or 3 days.

February 28: Complains of headache and pain over mastoid; nothing abnormal found in ear.

March 10: Improving nicely, although still has the pain over mastoid and a little above.

March 21: Discharged well.

In this case the abscess occurred without a fracture directly under the seat of a badly-infected scalp wound; the abscess was extra-dural and the location of the wound gave rise to the suspicion of an abscess. Had the scalp wound been located over an indifferent portion of the cortex, it would, to say the least, have given rise to a great deal of difficulty of diagnosis and might even have been overlooked.

This case illustrates another difficulty; we may have abscesses of the brain, following a scalp wound, without a fracture of the skull being present; the infecting agent can penetrate through the skull probably in this case by medium of a localized otitis, and still this does not explain the penetration of the internal table which was intact.

CASE 2.—George Kling, aged 49. Was admitted to strong ward with diagnosis of delirium tremens. Patient has alternating periods of stupor and delirium. Can be aroused only slightly. History obtained from police stated that he was struck on head in a fight.

Examination.—Marked tenderness over right side of head, just above the ear; marks of contusion; paresis of left side of face, slight ptosis of right eyelid; right pupil smaller than left; pulse 72, temperature $99\frac{1}{2}$. On account of mental condition, unable to make a more careful examination, but the patient is able to use both arms and legs.

There was gradual increase in the stupor, the temperature gradually rose to 103; on the fourth day a spastic paresis of right arm set in; on fifth day temperature rose to $104\frac{1}{2}$. An abscess of the left psycho-motor area was suspected.

Operation.—A linear fracture of skull was revealed, tearing of dura mater and contusion and laceration of the brain tissue, but no abscess or pus formation. Recovery complete.

Here we have all the indications of a surface abscess: fever, delirium, low pulse, monoplegia, surface tenderness and no scalp wound. The operation revealed a linear fracture of the skull, a torn dura mater and a badly lacerated cortex without the slightest inflammation or pus formation. This last case is specially instructive. Our caution and delay in operating was justified by the results. It was only when there was no improvement, but rather an increase in the symptoms, that we decided on an operation. We can readily see how much better such an individual would be without an operation as far as the future is concerned. There is always more or less danger from shock, from cerebral prolapse, with its attending scar and subsequent danger of epilepsy, to say nothing of the large aperture in the skull which remains after the operation.

When a violent headache, mental hebetude, mild delirium, increasing somnolence and a slow pulse follow soon after an accident to the head, when the scar is still fresh and there is undoubted evidence of a recent injury, the diagnosis even then can be very difficult. I need not cite successful operations or the history of suspected abscess which turned out to be localized meningitis. They are too common an everyday occurrence in large general hospitals to require especial mention. But when a long time, months or even years, have elapsed between an injury and the development of symptoms which point to brain abscess, the difficulty becomes very great. Case 3 is of this character.

CASE 3.—Charles Legnore, aged 23, admitted for conjunctivitis. Had an accident to head followed by unconsciousness 18 months before. States that he has had epileptic seizures for 3 years, at intervals of once a month. Denies syphilis. Transferred to neurological service in a stupor after a series of convulsions. These convulsions began about a week ago, always beginning in left side of face and then extending over left side of body, afterward becoming general.

Examination.—Pain and tenderness over right mastoid and occipital region. Percussion brings on a convulsion in left facial. Stupor—can be aroused only very imperfectly; when put on his feet staggers and complains of vertigo; falls to left side. Marked paresis of left side of face, of left arm and left leg. Complete anesthesia and loss of reflexes on left side of body. No optic neuritis. Left hemianopsia seems to be present. Examination in other respects negative. Temperature normal. Urinalysis negative. Pulse 66. One week after admission to neurological service there was complete paralysis and anesthesia of left side of body.

Operation.—Was operated on by Dr. Ransohoff for suspected abscess of the right temporal lobe. Operation revealed a perfectly normal condition of meninges and cortex. Aspiration in all directions, no pus. Mental condition and delirium cleared up after operation. Patient became bright and cheerful. Paresis diminished very much. Epileptic convulsions occurred only occasionally. The operation revealed no cause either for convulsions or for the paralysis.

Here we have all the signs of a cerebral localized abscess; not one is wanting, nor is there any aberration in the history of the case, and still the operation reveals no abscess. The case remains under observation six months after the operation and is discharged as a hemiplegic with no apparent cause for the hemiplegia that can be found, unless we look on it as a very small abscess or area of softening in the internal capsule, probably the size of a hazel nut. But how such a small focal lesion could produce such violent general symptoms is a mystery. A similar case is reported by Oppenheim. Early traumatic abscesses are usually extra-dural or intra-dural, practically cortical in location and usually are detected by their focal symptoms or, what is more common, localized tenderness of the skull on percussion. But latent abscesses are almost invariably subcortical and are situated in the white substance just beneath the cortex. There is always a layer of healthy bone or brain tissue with intact meninges between the source of infection and the abscess. This increases the difficulty of diagnosis, not only before the operation, for we all know that subcortical lesions produce less manifest signs than cortical ones, but also at the time of operation when the surgeon is confronted with healthy calvarium, meninges and a normal-looking cortex.

One more point before leaving the consideration of traumatic abscess. Gunshot wounds, knife thrusts or compound comminuted fractures are more apt to be followed by abscesses than simple fractures. Moreover, wounds attended by a longer period of suppuration are

more apt to be followed by latent abscesses than those which have closed quickly.

ABSCESSSES FOLLOWING MIDDLE-EAR DISEASE.

The difficulties in abscesses following caries of bone, especially middle-ear disease, are again two-fold. First, the difficulty of determining the presence of an abscess, not only in the acute, but especially in the latent period; secondly, of locating the abscess. In the period of acute manifestations of mastoid inflammation, especially in children, the signs and symptoms of the mastoid disease may simulate perfectly those of brain abscess, especially if the case is bedridden. The only absolute signs before the operation of brain involvement are cerebellar signs of a positive nature, or if the left side be involved, the occurrence of sensory aphasia. In doubtful cases, however, the bone and ear disease should first be attended to. Sinuses should be looked for and if the general signs of brain abscesses do not clear up after the operation, then a secondary operation may be indicated. Abscesses from middle-ear trouble are, however, notoriously latent, and this fact gives us great difficulty. Let me illustrate by an appropriate case.

CASE 4.—Mary Corcoran, aged 20, American, single, cigar maker, family history negative. Had a fall on head in childhood; there was, soon after, a discharge from right ear. Always had nasal and throat catarrh. In July, 1901, had a mastoid operation which was successful; no more discharge from this ear. Since then complains of headache, pain and soreness in occipital region on right side. Pain in the head is increased by sneezing and coughing; has vertigo and staggers at times like one intoxicated; usually staggers toward right side and says that she would fall if she did not grab hold of something. There is a constant fear of this vertigo and staggering. No vomiting; general health is very good. Sleeps and eats well; no constipation.

Examination.—Mental condition good; no hebetude; no impairment of memory; examination of right ear shows a healthy condition of the bones and mastoid process has healed completely. Ophthalmoscopic examination revealed some slight congestion of the veins of the right papilla, nasal margin sharply defined. Temporal margin a little indefinite. In every other respect the examination is negative.

Treated with tonics and protoiodid. All doubtful cerebellar symptoms disappeared after three months of treatment.

The most important contribution concerning brain abscesses in middle-ear trouble has been given to us by Koerner. He proved that we could accurately locate the seat of the abscess in the brain if we knew which part of the temporal bone was diseased. Koerner made autopsies on 109 cases of brain abscess; 86 times the temporal bone was diseased to the dura mater, 8 times half way through the bone, and in only 15 cases was it healthy. In 40 abscesses, 38 times the seat of abscess was immediately below the diseased bone, and the dura was involved. The dura was frequently adherent to brain and diseased bone.

If the roof of the middle ear is diseased the abscess is in the temporal lobe. If the mastoid cells or the posterior portion of the petrous portion of temporal lobe is the seat of inflammation the abscess is in the cerebellum; the middle lobe of cerebellum is involved if this purulent inflammation passes through the semi-circular canals. Bergman speaks strongly in favor of the above method of localization.

Another point in diagnosis is, that otitic suppuration when associated with a cholesteatoma, whether the latter be primary or secondary, is more apt to cause abscess of the brain than an uncomplicated one. The reason for this is given by Kirchner. The cholesteatoma penetrates the bone; in its growth ramifies the Haversian canals

for a considerable distance around its base; makes the bone thin and friable, fills it with large cavities, and in this way renders the corrosion by the pia an easy matter and paves the way for an abscess. In addition to this the pus is dammed back by the cholesteatoma and the breaking through and the corrosion becomes an easily accomplished fact. In these cases the pus is thus decomposed and cholesteatomatous masses float in and on it. Virchow, in 60 cases of otitic brain abscess, found one-fourth with cholesteatoma. Two other factors predispose to the formation of otitic abscesses: *a*, the course of suppuration in acute or subacute exacerbations, the pus being fetid; *b*, the presence of large granulation masses in the middle ear, or deep in the external ear; the granulation masses acting as a dam to the pus. Thus we see we can obtain important diagnostic data from the examination of the external ear. Another important diagnostic point in otitic abscesses is the fact brought out by Koerner, that otitic abscesses are oftener on the right side than the left. Herzberg showed that the transverse sinus on the right side lies deeper in the bone than on the left. Koerner proved this to be the case in 70 per cent. of his autopsies. This causes the bone, therefore, to be thinner and more easily perforated by a cholesteatoma or fragment of dead bone (by the suppurating process).

When the origin of the abscess is in the roof or attic of middle ear, the bone having become inflamed or corroded, the first step is a purulent pachymeningitis, and this is followed either by an extra- or intra-dural abscess. The intra-dural abscess is at first connected with the dura mater, afterward becomes separated by becoming encapsulated and then becomes subcortical in the temporal lobe. Often we have both extra-dural and intra-dural or brain abscesses at same time; this is very important to remember (E. Hoffmann). We can diagnose an epidural or extra-dural abscess (Bergman) only by the following signs; by external signs when the pus escapes either through middle ear, through temporal bone or mastoid cells. Abundant flow of pus, of short duration, will arouse suspicion of abscess, especially if the signs of previous increased intra-cranial pressure disappear with flow of pus. Discharging fistulæ and especially edema or fluctuating abscess over the mastoid bone, lead to diagnosis of an epidural abscess of the middle or temporal fossa.

The difficulty of locating an otitic abscess is increased by the fact that middle-ear suppuration is often associated with suppuration of the mastoid process. Then we must look for caries or otitis, because if the latter process is either in the antrum or in the mastoid it is liable to determine the seat of abscess.

A badly located or a small tympanic perforation is apt to cause brain abscess by damming back the pus. Otitic abscesses have an imperceptible and unknown (as to time) beginning; never sudden; trauma plays no rôle.

Otitic cerebellar abscesses are very difficult to diagnose and are frequently complicated with sinus thrombosis and lepto-meningitis and masked by the latter. We look for cerebellar abscesses in caries of the sigmoid fossa, of the sulcus transversus, of the labyrinth and the mastoid cells (Koch). Koch has proven that cerebellar abscesses before the age of 10 are rare (2 out of 105). Hence, prior to this age we must look for temporo-sphenoidal abscesses.

The cerebellar abscesses are found in the lateral and at times in the median surface of the hemispheres and

usually in the anterior lower surfaces, and in such a way that caries of the sigmoid sulcus cause abscess of the lateral and the caries of the labyrinth, of the lower median surface.

Koch divides symptoms of cerebellar abscess into groups according to three types of abscess:

1. Diagnosis made from marked cerebellar focal signs.
2. Marked signs of general brain pressure with but few and indistinct focal signs.
3. Neither local nor general symptoms are well marked, but the nature of the suppuration is in the mastoid region and the finding of fistulous openings through the dura leads to discovery of the abscess in the cerebellum.

The general symptoms are those of general brain pressure, but the pulse is very slow, the vomiting rare and optic neuritis occurs in but one-fourth of the cases. General pressure symptoms in cerebellar abscesses are due to dilatation of the ventriculi.

Rhinogetic abscesses are due to purulent processes in the upper nasal passages and the sinuses connected with them, viz.: The frontal, sphenoidal and maxillary. The route which the pus may travel is through the cribriform plate, along the horizontal plate of the ethmoid, or through the orbital cavity along the optic nerve. Simple operations, like the removal of polypi or of adenoid vegetations of the naso-pharyngeal plate, may, if followed by infection, cause cerebral abscesses. Just as in otitic abscesses, the inflammation and caries of bone of the above-named cavities cause an extra-dural and intra-dural abscess, a leptomeningitis and cerebral abscess, with an associated phlebitis of the sinus cavernosum, the difference being the greater frequency with which they are associated in the same case. The course of the inflammation from the malar sinus is through the orbit, by the way of the orbital veins. Out of 20 abscesses of the brain due to the above source of origin, 19 were found in frontal lobe and only one in the temporal.

This great frequency of abscesses of the frontal lobe following the above-named diseases makes the diagnosis easy when the general signs and symptoms of abscess are present. The localization is made from the seat of the pus infection, but, like tumors of the frontal lobes, the general and special signs may be absent. In a case on record in the Cincinnati Hospital service of Dr. Murphy, the boy was in the wards for fully sixty days for frontal sinus disease; he was up and about daily and was considered bright, active and intelligent. Two days before death he suddenly developed the general signs of a brain abscess, the operation revealed an abscess of the size of a duck's egg, discharging foul, offensive pus, which must have been present for months.

TUBERCULAR ABSCESES.

In connection with tubercular abscesses two things are positive: One is that after the formation of a tubercle in the brain, a purulent inflammation may occur around the tubercle, and in reported cases the tubercle may completely break down, a microscopic examination being necessary to determine its tubercular origin, and, secondly, Koch has shown that the cause of the purulent inflammation is the dead tubercle bacillus. These tubercular abscesses may explain the so-called idiopathic abscesses and are of special interest in one direction, namely, that we may have all the indications of a cerebral abscess without any known traumatic or pus cause and still be justified in the diagnosis and the operation.

The difficulty in diagnosing tubercular abscesses is two-fold: In the first place there is an absence of all

known causative factors in the case as it lies before us, and, in the second place, the general symptoms of tuberculosis overlap those of the brain trouble, and distort the clinical picture. These abscesses are very frequently in the cerebellum and then by producing basilar symptoms simulate very closely either a tubercular or syphilitic meningitis. A case of the latter character occurred in the Cincinnati Hospital on the service of Dr. Jos. Eichberg. Let me introduce a case which illustrates the difficulties named above:

CASE 5.—F. E., male, aged 42. Admitted to the Cincinnati Hospital March 4, 1901, in a state of syncope and no history obtainable except that he had had headache for some time and had been dizzy; uses alcohol and tobacco. Patient very much emaciated; lies in bed and seems to observe everything that is going on; expresses no ideas; when spoken to does not always answer; sometimes it is several minutes before he replies; does not utter any connected phrases; complains of severe pain. Left pupil dilated; both react to light and accommodation. Paresis of right side of face.

Necropsy.—By Dr. D. I. Wolfstein. Brain when taken out was very soft and flabby, the left lobe being especially so on the cortical surface in an area extending downwards from the lower half of anterior frontal convolution to the base of the brain and bounded posteriorly by the fissure of Rolando, inferiorly by the Sylvian and anteriorly impinging on left inferior, frontal and middle frontal convolutions was an area of softening; after hardening in formalin this proved to be a globular mass, which could be shelled from its surroundings and which was hollow and filled with greenish pus. Brain tissue surrounding mass was also extensively softened; whether this is a broken-down tumor or a tubercular abscess microscopic examination must determine. The symptoms were aphasia, right facial paresis, some slight paresis of right arm and less of right leg, ataxia, and patient lay in a state of stupor. Macroscopic examination of pons revealed nothing abnormal, likewise in cord. Heart small and flabby. Lungs, left, tubercular, lower lobe full of miliary tubercles, and one small abscess. Liver fatty; spleen friable; kidneys small, hyperemic; extremities negative.

Histology.—Brain: From what was a cyst or cavity filled with purulent material, sections were made and stained according to two methods of Mallery's to determine the presence of any overgrowth of glia tissue. This the specimens examined did not show. The staining was hematoxylin eosin. The wall of the cyst, which was of about 1/32 m. in thickness, shows a very intense small-celled infiltration with an inner layer next the cavity ragged, and in many places broken-down and degenerated; while no typical tubercles were found, there were many rather small suspicious nodular collections of cells which were taken to represent tubercular areas. The outermost area shows a layer of thickening which we think was due to glia proliferation, in spite of the fact that the miliary specimens were negative. There was also meningeal thickening over the area. The cord was not examined as there were no symptoms presenting.

The location of this abscess, tubercular, secondary to pulmonary tuberculosis, explains the aphasia, and also the facial paresis, as it involved the lower half of the frontal region on the left side (speech center) and extended back to the pre-central convolution. The arms and leg centers were not included in its territory. No study of secondary degeneration was made, as the brain was in a state of decomposition when obtained.

METASTATIC ABSCESES.

Metastatic abscesses are usually pyemic in origin, multiple, and usually not good subjects for diagnostic skill. Bergman says, however, that at times they are solitary and operable. MacEwen says that solitary metastatic abscesses constitute one-third of the pyemic abscesses and Martin found in 22 cases 9 of pyemic metastatic abscesses of the brain. The origin of these metastatic

brain abscesses is usually the lung. Gangrene, abscess, empyema, pleurisy or bronchiectasis, but they may be secondary to gangrene in any part of the body. Like all cerebral emboli the metastatic abscess if solitary is usually found in the left carotid region (Martin's 7 cases out of 9).

SO-CALLED IDIOPATHIC ABSCESES.

To Bergman's classification of abscesses a fifth group should be added, namely, the group not so much of idiopathic abscesses, but of abscesses in which there has been no previous deposit of pus in the body from which the streptococci could be drawn. This leads us to the discussion of so-called idiopathic abscesses. That there can be no idiopathic abscess in the sense of an absence of some cause for suppuration we must admit. But we know that we can have primary brain abscesses which can not be grouped under any of the four preceding heads. This is an exceedingly important point to remember when we are confronted with the necessity of making a diagnosis or differential diagnosis. Martin has worked up this subject and points out four cases of Strümpell's observed during an epidemic of cerebrospinal meningitis in which no other cause could be found. Oppenheim says that there is no doubt whatever that the influenza bacillus can cause not only a meningitis or an encephalitis, but that also an abscess may complicate the meningitis, the latter may disappear and the former may remain behind, or the abscess may occur independently of a meningitis. He also reports cases in two articles in which he calls attention to the fact that acute non-purulent cortical encephalitis may simulate brain abscess. At this point I would like to introduce a very interesting case in which the clinical diagnosis was either brain abscess or purulent meningitis.

CASE 6.—Lincoln B., aged 38, married. Had deafness and ear trouble since childhood. Pneumonia 10 months ago. Denies syphilis. Has been demented for 3 days (queer actions), brought to hospital in patrol. On admission was maniacal, after 24 hours alternate periods of apathy, depression, with difficulty of speech, alternating with delirium and mania.

Examination.—Pupils equal in size, react to light; slight divergent strabismus; ophthalmic examination negative; can not protrude tongue; responds sluggishly to questions; complains of pain in head; discharge of fetid from right ear; extremities weak, rigid with increased reflexes. Babinski's reflex on left side; Kernig's sign well marked; slight trace of albumin in urine; pulse varies from 60 to 70, temperature from 98 to 101.2.

The difficulty of speech increased during the next few days, the stupor became more marked and a twitching of the muscles of right side of face developed; afterward the rigidity with marked twitching but no real convulsions of all four extremities; the pulse going to 130, the temperature to 102.

During next few days some improvement; then developed a convulsion beginning in the right arm and then becoming general. This was followed by coma and death.

The autopsy showed no abscess or purulent meningitis, nor even any congestion, but a marked case of interstitial nephritis.

Here we see how a case of uremia may simulate brain abscess or purulent meningitis. Gussenbauer and Von Beck have published similar cases. Gussenbauer's case was not cleared up at all, Von Beck's proved to be a case of hemorrhage encephalitis of the pons.

SYMPTOMS OF ABSCESS.

The consideration of the symptoms of brain abscess is rendered easier by dividing them into three groups:

1. Symptoms due to deep-seated suppuration.

2. Symptoms due to increased intra-cranial pressure.
3. Focal symptoms.

1. If there is an absence of pus in other parts of the body and there is no other cause, the occurrence of fever with other signs of sepsis may aid us to form a diagnosis. Fever and the attendant signs of sepsis, viz.: general malaise, loss of appetite, headache, occur in remissions and exacerbations, with complete remissions. This variation is dependent upon the successive increase in size of the abscess and is characteristic. The fever in the latent or preactive stage is usually low, rarely over 101, usually between 99 and 100, although in the acute period of active manifestation it reaches a higher mark. Slight chilliness with a rise of fever occurs usually at night. The patients frequently look sickly pale, jaundiced and emaciated. Typical chills may occur in abscess, but repeated chills are rather indicative of septic sinus thrombosis. A high continuous fever speaks rather against abscess and for purulent leptomeningitis, sinus thrombosis or extra-dural pus. The presence of fever in suppurating middle ear or mastoid disease is no indication of abscess.

Bergman and Broca both maintain that the surface temperature is higher on the side of the abscess. The temperature may be normal for a long time during the latent period, and MacEwen called attention first to the frequency of subnormal temperature. In the period of acute manifestation the headache is extremely violent and constant. During the latent period it is intermittent. Characteristic of the headache is its regular increase during the evening fever. This headache may be absent during the rest of the day, is increased by anything that increases the intra-cranial pressure.

In otitic abscesses, and in others also, the pain may be localized over the abscess, and is much increased by percussion. This localized tenderness does not appear when there is inflammation of the mastoid or the neighboring temporal bone in middle-ear trouble. In many cases this circumscribed localized pain and tenderness is very valuable in the localizing of abscesses.

Vomiting is important; early, present in majority of cases, especially cerebellar cases; mere change of position, from reclining to sitting, may bring on vomiting. Vertigo is of little value. The condition of the sensorium varies with the amount of intra-cranial pressure in the latent stage. There may be very little intra-cranial pressure for the reason that unlike brain tumor, abscesses do not compress the brain tissue, but liquefy, destroy and replace it, and therefore large abscesses in a quiescent stage, even to the size of a duck's egg in the frontal lobe, may produce no disturbance of intelligence or of consciousness. In the stage of activity, however, and just before rupture, we have the typical mental hebetude, somnolence, often delirium and hallucinations.

A slow pulse of 60 or less is always indicative of increased cerebral pressure, other causes being absent, but a rapid pulse in the acute stage is often present, and is not a contraindication to abscess. During any fever the pulse usually becomes somewhat more rapid, but in abscess there is often a decline of the pulse rate with increased somnolence during the evening rise of temperature, and this, if found, is a very valuable symptom. Optic neuritis is more frequent than in tumor, but not so well developed (as to degree). If optic neuritis is absent the abscess is either of very acute development or small in size; abscess of frontal lobe has most marked optic neuritis.

Focal symptoms help much to make the diagnosis if the abscess is present in the psycho-motor area, little if

present in the occipital, temporal or frontal lobes. Focal signs in abscess may come and go because of the varying size of the abscess and the disappearance, temporarily at least, of the surrounding softening. We may have large abscesses of the centrum semi-ovale without focal signs, for the pus at first separates the white fibers instead of destroying them, and if the gray matter is intact, a whole lobe, Bergman says the greater part of a hemisphere may be destroyed without the development of a focal sign. The closer, however, the abscess is to gray matter and the greater destruction of tissue the more focal signs are developed. As in brain tumor, we must distinguish between focal signs due to destruction and focal signs due to pressure from edematous infiltration. The latter may come and go; the former are permanent and localizing. As abscesses may be present in any part of the brain we may have any of the corresponding focal signs.

Traumatic abscesses of psycho-motor area are characterized by the rapidity with which monoplegia and hemiplegia follow the Jacksonian epilepsy, or if the abscess is deep-seated, the rapid, but not apoplectic development of a hemiplegia without hemianesthesia. The paralysis is rarely complete.

Abscesses of the frontal lobe, like tumors in this region, have no specially localizing signs; on left side when large we may have motor aphasia involvement of right facial, even of arm; the localizing can be done, however, by considering the causal factors.

The hearing center is of value only if opposite ear is involved externally and has not been the seat of previous inflammation. Hence, according to Barr, it is of no value in two-thirds of the cases because the purulent otitis is bilateral.

Sensory aphasia is present in abscess of the left temporo-sphenoidal lobe. It is very important to remember that in most cases the sensory aphasia is transitory and not permanent; this is due to the fact that the abscess is usually on the underside of the temporo-sphenoidal lobe, which lies above the roof of middle ear, and affects the speech center only by distal pressure. Even epidural abscesses can affect the speech center by pressure (second case).

Abscesses of the temporal lobe are differentiated with difficulty from tumors, because fever is so frequently absent. We must rely on the etiology. Bergman says that even with all our diagnostic aids we frequently make mistakes in temporal abscesses.

With the abscess in the lateral lobes we will usually miss marked cerebellar signs, unless the pressure of the abscess affects the vermiciform lobe, when, as in MacEwen's case, we will have marked ataxia. Then the centers and branches of six of the basilar nerves may be affected, but not so often as in tumor. Vertigo may just as well be due to labyrinthine as to cerebellar trouble, and is therefore of little value. Vertigo, uncertain gait and retraction or stiffness of neck are fairly often associated in cerebellar abscess. We can see, therefore, that the diagnosis of cerebellar abscess has usually been made, after the mastoid had been opened. In 19 operated cases tabulated by Koch, 8 times the abscess was found by the finding of a sinus leading to the abscess during mastoid operations, 7 times by aspirating in all directions and finally finding the abscess in the cerebellum, and only 4 times was the diagnosis properly made before the operation by a consideration of signs and symptoms.

A chief factor of chronic latent abscesses is that they are subcortical, usually about one eighth to one-fourth of an inch beneath the surface. The discovery that the

cortex of the brain could be punctured and cut into with almost no danger, is very recent. In compound comminuted fractures Ashley Cooper would not even remove the spiculæ of bone which had been driven into the brain. Dupuytren was the first to cut into the brain and empty an abscess, but his patient died, and for many years no surgeon ventured to repeat the daring operation. As a result of aspiration on the one hand and of increased knowledge of the physiology of the cortex on the other, surgeons no longer hesitate to make incisions into and puncture even deep into the brain substance. This procedure, however, is not without some danger. I have seen one death result after aspiration as a result of an injury to a vein of the choroid plexus with hemorrhage into the lateral ventricle.

CONCLUSION.

In conclusion let me introduce Oppenheim's résumé of his diagnostic experience. He says that in the majority of cases of suspected abscess he could rule out abscess at once without any trouble. In 35 cases he had serious difficulties of diagnosis. In 14 of the 35 cases he made the diagnosis of abscess. The other 21 cases were either localized meningitis, cerebrospinal meningitis, encephalitis median otitis and brain concussion.

Of the 14 abscesses, four belong to the period antedating the days of brain operations. In five cases an operation was deemed inadvisable, either because the abscess could not be located or because of complications. In five cases an operation was performed, in two of these the abscess was not found, although present. In the three remaining cases the operation was successful, but only one case recovered, the other two dying of the complicating meningitis. This experience of Oppenheim is the experience of all neurologists and explains the difference of opinion between us and the surgeon. The surgeon sees only the sifted and positive cases and feels that the diagnosis is easy and the results good; the neurologist sees all the doubtful and fatal cases and is not quite so sanguine.

THE DISEASED MIDDLE TURBINATE.*

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The undue importance which has been given the lower turbinate bodies in the search for the etiology of nasal disorders has overshadowed all other parts of the nasal cavities and led to wrongfully crediting the lower turbinates with the more important instead of the less important rôle in the production of nasal disease. This was principally owing to their easy accessibility and also to the fact that in most nasal disorders these bodies were found swollen and occluding the respiratory passages whereby effect was mistaken for cause.

A moment's reflection will convince one that an acute coryza manifests itself in the region above the lower turbinate first, with a feeling of dryness and pressure followed later by obstruction to respiration due to swelling of the lower turbinate. Very often a patient presents himself with a beginning coryza in which the only perceptible change of the mucous surface is a dryness and redness of the upper nasal chambers with some swelling of the tissue over the middle turbinate and little obstruction to breathing; but a few hours later having the lower passages tightly plugged by swollen tissue.

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The anatomic relations of the middle turbinates are of the highest importance and can not too often be reviewed. The middle, sometimes called the ethmoid turbinate, is the extension of the ethmoid bone into the nasal chambers. This fact must be borne in mind for its important bearing on the etiology of disease in the middle turbinate, for suppurations in the ethmoid cells are often accompanied by a like condition in the turbinate, and vice versa.

Between the body of the middle turbinate and the nasal side wall are the openings of the frontal sinus, maxillary sinus, ethmoid cells, and at its posterior end is the opening of the sphenoid antrum. In a state of health the turbinate acts as a barrier, protecting the outlets of these various cavities from external irritants, but when inflammation occurs the resultant swelling produces occlusion of the outlets and retention of the secretions. The retained discharges ferment and in their turn become irritants, whence the above condition tends to be self-perpetuated.

The shape of the middle turbinate within physiologic limits varies greatly, depending on the type of nasal chambers in which it is found. In the high-roofed narrow chamber it may be merely a thin lamellar plate suspended by its upper border from the inward leaning side wall, and may be easily bent from side to side by the exploring probe. In the wide roomy chambers of the Germanic races it may assume the typical shape described in the text-books, while it may possess almost any variation from these and still retain, physiologically, perfect shape. By this I mean that when, itself not involved in inflammation, it does not press on any of the sensitive areas in its neighborhood or block the openings of the accessory sinuses it may be considered physiologic, however bizarre its shape.

The most common type of the middle turbinate is the one with knobbed anterior, which quite effectually shuts off from view the space lying above and behind. The space between the turbinate and septum varies from 1.5 to 3 mm., and between the turbinate and side wall usually a little less.

The opinion seems gaining ground that the meatuses serve merely as gutters to drain off nasal secretions and when pus is found in them it is produced in one or more of the accessory sinuses or cells. If time proves this to be correct it will greatly simplify our etiology if it does not make treatment any easier.

For the location of the point of origin of nasal pus a certain line of procedure is important. Inspection both anterior and posterior should precede cleansing or blowing the nose and masses of pus will often be seen lying in the lower and middle meatuses which are continued upward to their point of origin, or at least far on the road. After the patient blows his nose inspection is to be made again.

By way of parenthesis let me say that one-half the patients, especially children, need instruction in the proper way to blow the nose, most of them holding both nostrils tightly closed until the air is under pressure, then allowing it to partly escape by both nostrils at once and suddenly checking it; a method eminently calculated to precipitate Eustachian and middle-ear catarrh. The proper method is this: One nostril should be closed by pressure on the ala and the whole explosive air current directed through the open side. When this is properly done the masses of fluid pus will be expelled from the lower passages and inspection will often show the pus drawn out into a rope with one end issuing from the infected sinus infallibly pointing out the way.

Next, a cocain solution is applied with a probe to the lower turbinate and the anterior part of the middle one, sufficiently strong to induce some shrinking of the tissue. This opens the way frequently to discovery of hidden polypi, spurs, etc., which are not seen on first inspection.

Next, with a very thin and flexible probe, the tip surrounded by a thin pledget of cotton tightly wound and dipped in cocain, the regions about the middle turbinate are carefully explored and an estimate of the amount of space between septum and turbinate body, and the latter and side wall is obtained, together with the discovery of small polypi, localized hypertrophies, abnormalities of form and size of the turbinate and possibly denuded areas of bone.

The limited time at my disposal will permit an examination of two conditions only which are the results of suppuration, the one external and the other internal to the turbinate body, both of which may lead to increase in its bulk.

The first of these is nasal polypus, and my first proposition is this: Nasal polypus is a sign of existent or past suppuration in either the ethmoid cells or one of the accessory sinuses. Nasal polypus arises most frequently from the middle turbinate, next from the edges of the hiatus semilunaris around the outlets of the frontal and maxillary sinuses and anterior ethmoid cells lastly from the posterior ethmoid and sphenoid antrum outlets. They are usually accompanied by suppuration, and I believe they never occur without antecedent suppuration of the ethmoid or the sinuses.

Pus issuing from these and flowing over the mucous membrane, eroded as happens during an acute coryza, excites the formation of true granulation tissue just the same as forms in the suppurating ear or around a healing mastoid and aided by gravity and an over-abundant serous secretion they go on to become polypus. I am aware this is not a generally accepted theory, but it has the merit of newness and plausibility, and in view of the fact that about all authorities acknowledge that the cause of nasal polypus is obscure or "in accord with some unknown law" it is as worthy of acceptance as any.

By far the larger number of cases of nasal polypus, particularly if multiple, will be found accompanied by suppuration, sometimes unseen until the polyps are removed, when an enormous amount of pus may be found to issue from some adjacent sinus. The removal of polypus should be considered as preliminary to more extensive operations in most cases, and should be undertaken only with the cold snare and strong illumination so as to be able, so far as may be, to see every step of the operation. Blind fishing with polypus forceps is a relic from the days of the moxa and seton, and no man is warranted in being guilty of their use.

After removal under cocain and adrenalin of all the polyps in sight, within a day or two it is often possible to find more which have come down from the spaces above, where they had been retained by the pressure of the lower ones, so that several sittings may be necessary to secure those which can be reached without interference with the bone. There is no assurance that when this is done all have been secured, for I have repeatedly removed the middle turbinate body and found from one to a dozen good-sized polyps concealed either behind, above or within the bone. Because of this experience I now make it a rule to remove the middle turbinate, either in whole or in part, when there is active disease of the turbinate, the adjacent sinuses or cells or

when asthma is not relieved permanently or when the polyps reform after removal.

The tendency of polyps to grow again after removal is well recognized, but this is more common with the mucous than the fibrous and the multiple than the single. This is due, not to an inherent disease or degeneration in the mucous membrane so much as it is to irritation from pus flowing over it externally or to purulent inflammation of the underlying bone.

No treatment of the stump is likely to prevent recurrence and is often worse than useless, increasing rather than checking growth. Nothing but removal of the cause will succeed, and to do this the middle turbinate requires amputation. This bone is the site of fully one-half the polyps formed and I believe much more than half, so that its removal gets rid of the basis of the larger part. Then the turbinate is usually greatly increased in size in these cases adding its own bulk to the causes of obstruction. After polypus has existed for some time, even if from disease of other parts, this bone is found diseased and the pneumatic cells filled with pus or containing polyps.

I would therefore advocate removal of the middle turbinate in all cases of recurrent polypus of the middle turbinal itself; in all cases of recurrent polypus of the hiatus semilunaris; in all cases when removal of polypus opens and reveals collections of pus issuing from the sinuses, and in cases when by pressure the enlarged turbinate causes reflex nervous ailments, such as muscular asthenopia, persistent headache, chorea or epilepsy and especially asthma.

Nasal suppurations, post-nasal dropping, asthma, headache, disposition to frequent coryzas with slight cause; in short, continual nasal irritability is liable to remain so long as a single polypus is left, and if such symptoms persist after the healing following total removal of all which can be discovered, I contend it is the duty of the rhinologist to remove the middle turbinate, or enough of it to uncover the hiatus semilunaris and render easily accessible all portions of the nasal chambers lying above and behind the turbinate. So generally have I found polypus in surprising amounts after such removal in case of multiple polypi that I would now be surprised if I did not find them.

CASE 1.—A case in point is that of a physician, for years an acute sufferer from asthma, who under several eminent rhinologists had run the gamut of fashionable treatment, from galvano-cautery, that converted the nasal chamber into a beautiful dry scar, to trephine, which left only a hypertrophied scar stump on the site of the opposite inferior turbinate. As interlude he had had frequent removals of mucous polypus from either chamber. The right middle turbinate was hypertrophied and pressed on the septum, but no polyps could be detected on either side. To stop pressure the bone was removed and four large polyps were found in the hiatus semilunaris and above the bone posteriorly three additional were found within a week. The result of removing the stump of lower turbinate and straightening a deformed septum on the same side and removal of the middle turbinate of the opposite, with its concealed polyps, was nearly total relief of an asthma which had lasted for years and broken down an otherwise vigorous constitution.

Removal of the turbinate for several different conditions has brought to my notice a considerable number of cases which I think account for the bullous enlargement of the middle turbinate which is such a fruitful source of nasal disorder. Bullous enlargement has been variously attributed to a periostitis and to a hyperplasia of the bony elements, but these cases point to a very different cause.

CASE 2.—A hay-fever patient had in childhood suffered from eczema and asthma, probably from adenoids, which disappeared before puberty, but his hay fever developed at about 30 years of age. There was at that time no enlargement of the middle turbinate and no asthma, but about six years ago asthma complicated the attacks coincident with commencing enlargement of the turbinate. The asthmatic seizures grew heavier as the bone grew thicker, and lasted later into the winter, until they were likely to be precipitated by any overexertion or error of diet. By this time the bone was pressing continuously on the sensitive septum. To relieve the irritation of this pressure the turbinate was amputated in October last and was found becoming bullous; stiff, inspissated pus occupied the greater part of the cell in the anterior portion. None of the adjoining ethmoid cells or sinuses gave any evidence of disease and healing was very prompt. The patient gained weight and strength very rapidly and passed the last winter in better health than for years. There was very moderate post nasal discharge with a burning, smarting feeling above the palate, particularly on



Fig 1.—Specimens (actual size) illustrating cases 1, 2 and 4. No. 2 is the first case—dried specimen; No 1, three fragments of specimen from Case 2, also dry; No 3 is from Case 4, with its adhering polyps P and P', the latter being on the upper posterior surface entirely concealed until the bone had been extracted

awakening, and disposition to rasp the throat and an obscure feeling of constant pressure in the bone below the inner angle of the eye, but nothing else to indicate the presence of the pus. There has been no asthma since the operation, but the next hay-fever season will tell whether it is curative for the asthma.

CASE 3.—Another case was also an asthmatic without any definite clinical history, either as to origin of the attacks or symptoms aside from frequent severe paroxysms. The removal was done for relief of the pressure on the septum, which was very severe. The bulla, which was very much larger and the walls thinner than in the last case, was found completely filled with cheesy pus. As before, there was no involvement of the adjacent sinuses or cells and the healing was uneventful. There has been no asthma since the operation except an attack brought on by pressure from dry secretions imperfectly removed by the patient.

Asthma and hay fever are particularly aggravated by attic occlusion from middle turbinal enlargement. There is one point that I have been rather surprised not to find mentioned in the literature, and that is the invariable association of middle turbinal hypertrophy with atrophy of the inferior turbinal. I have found the best results in atrophic rhinitis to follow vigorous attacks on the middle turbinal so as to improve the ventilation and drainage of the attic of the nose. One very important thing in operating is not to substitute one evil for another, therefore we do not want to produce a synechia which will also cause occlusion. Consequently, a method of operation should be selected whereby the wound will be limited to the middle turbinal and whereby the mucous membrane of the septum will not be injured. The objection to the punching forceps, often used, is that the mucous membrane of the septum may be injured and a synechia follow. I have designed a trephine, whereby I can remove a piece from the anterior end of the middle turbinal both painlessly and bloodlessly. This trephine is different from the ordinary trephines and is very much longer. It is probably six inches long, including the hand-piece collar, and the projecting guard is perhaps an inch and a half long and projects about one-quarter of an inch beyond the trephine, being thin and flat, so it can always be passed between the middle turbinal and the septum, and thus serves as a protector of the mucous membrane of the septum. As the trephine enters, the guard projecting beyond its point acts not only as a guide but also as a guard, preventing the injury of any part that it is not desired to touch. By a slight up and down motion the core is detached and the trephine removed, leaving a hole in the turbinal into which one blade of a pair of shears may be introduced while the other blade is placed in the meatus beneath and an incision is then easily made with the shears. This leaves a loose piece, somewhat resembling a polypus that is horizontal instead of vertical, about which a cold snare is introduced, so the entire piece is removed. I will say I have found that there is more resilience in a certain kind of wire that is sold as the E guitar string wire. In regard to the snare, I have found the Bucklin snare to be the most satisfactory. It is a modification of the Wright snare. I have not seen the forceps mentioned by the essayist, but it has occurred to me if the blade that cuts upward was only a fenestrated blade, as in Dr. Myles' forceps, it would be more useful. I recently ordered such a pair from Europe, but when the order returned the forceps were not included. I have since learned that such forceps have been designed by Dr. Roe of Rochester, but I have not yet been able to secure a pair.

DR. G. V. WOOLEN, Indianapolis—I have noticed of late a very strong tendency to deal with the affections of the nose and head with a view to suppuration and empyema. One time we ran in the direction of microbes, and then we ran in the direction of suppuration. I have not heard anything about pressure irritation. I wonder if we have forgotten the classical paper by Dr. Lefferts, written in the eighties, in which he called attention to pressure irritation and defective drainage. When we take into consideration the nasal nerve coming down over the turbinates and septum, the form of the attic of the nose and the middle turbinal, the first thing, it seems to me, that we ought to think of is pressure irritation. Anybody who has had an attack of pain from a corn or bunion can appreciate it.

DR. KATE W. BALDWIN, Philadelphia—I have had one case of severe hemorrhage seven days after a turbinectomy. At the time of the operation a number of polypi were thoroughly removed, leaving the space free. There was almost no hemorrhage at the time of the operation and not until the seventh day, when it occurred after some vigorous exercise. It was as alarming a hemorrhage as I have seen in nose and throat work. There was so little bleeding at the time of the operation that I did not pack. At the time of the hemorrhage I was obliged to do so. A large polypus had come down, and I am not sure whether or not it was the release of it that caused the hemorrhage.

DR. EMIL MAYER—What was the age of the patient? Was there any constitutional condition, hemorrhagic diathesis, that

might account for it, or might there have been an arteriosclerosis?

DR. BALDWIN—The patient's condition was very poor, especially the mental condition. I think there were probably polypi in the sinuses, but I had no further opportunity to watch her. There was no hemorrhagic diathesis. The mental condition improved somewhat. The patient was 25 years of age.

DR. MAYER—The reason I asked the question was to determine if there was any arteriosclerosis, such as might be due to syphilis or something of that kind.

DR. ALLEN DEVILBISS, Toledo, Ohio—I wish to ask a question of Dr. Baker. I understood that he would hook his spokeshave over the growth and pass it through the mucous membrane and bone at one pull. Is that correct?

DR. BAKER—Yes, sir.

DR. DEVILBISS—I believe I have a good strong hand, but I can furnish some turbinates in which the Doctor would have to have a stronger arm than I have to do that. We could shave the soft tissues off in that manner, but it requires only a little resistance to stop a cutting edge against a hard surface. It is different if you can use a sliding motion, and it may be that the Doctor has some peculiar method of doing this.

DR. O. T. FREER, Chicago—I have resected both the inferior and middle turbinated bodies in this manner and have had no trouble in cutting through the bone in the cases that I have so far met. Ordinarily the turbinated bones are so frail and porous that they can be fractured with the finger and they offer thus but little resistance to the strong edge of the spokeshave. Where middle turbinectomy is done to give drainage of the upper nasal passages, the middle turbinated bone is often softened by rarifying osteitis, due to chronic suppurative inflammation. There is less trouble in cutting through the bone than in hooking the spokeshave over the posterior end of the turbinated body. This may be impossible of performance and the instrument may slip off, where tortuous nasal chambers displace it from the intended direction. I do not advocate the use of the spokeshave as an exclusive method for turbinectomy, but as a valuable resource where scissors, snare or cutting forceps can not be employed with satisfaction. In these cases it may do with one cut what otherwise could only be attained by tedious and painful manipulation.

DR. R. C. MYLES, New York City—I must confess it has been rather difficult for me to always tell definitely how far the middle turbinate is diseased. We have mechanical conditions that interfere with its functions and when those are relieved the middle turbinate recovers. That is chiefly true in cases of deflection of the septum. If the deflected septum is properly treated, the middle turbinate will return to its normal condition. Removal of the anterior half of the middle turbinal will relieve many cases of incipient empyema. Eight or ten years ago I described an instrument in the *Medical Record*, and from that time until now I have modified it, until I believe in all cases in which the septum is not deflected, and in many cases in which it is, it may be moved over sufficiently to introduce this instrument. Under cocaine and adrenalin the turbinal may be quickly and satisfactorily removed. I was forcibly struck by the elongation of the uvula in cases of quincy. It may become three or four times its normal length within a few days. This is because the quincy interferes with the venous return of blood. I have found that elongated palates, more or less chronic, may shorten up when the blood is allowed to return through the venous channels. I believe much is due to the stasis of blood circulation. We find it in arteriosclerosis, and in syphilis and in polypi. When the antrum of Highmore is opened and free ventilation is secured one will find that polypi and edema will frequently disappear, because the pressure has been removed and the irritating material drained off.

DR. P. J. GIBBONS, Syracuse, N. Y.—In the removal of the middle turbinate, I have often found we can make a mere perforation, if necessary, and it will make a cracking sound as if you punctured the shell of an egg, and then you can use the instruments more readily. I have seen the anterior portion of the middle turbinate so dense that the electric

drill, revolving 2,200 to even 3,200 revolutions per minute, would not touch it. I would like to speak of the total removal of the middle turbinated bone. You should not remove it entirely except when you can not possibly help it. The posterior part, if possible, should be retained. If the turbinate presses on the septum, crush it, if necessary, as you do in craniotomy for the removal of a child. An article by me appeared in the *New York Medical Journal* of July 9, 1892, on the treatment of nasal stenosis by means of a new intranasal tube. I called it a new intranasal tube because Hippocrates and later Galen used intranasal tubes. Dr. Baker called attention to asthma. In one part of my article I say: "In the tube we possess a valuable device, and with it, in conjunction with medicinal and operative treatment, we can cure diseases that we were unable to cure in the past. This is true, especially in asthma and hay fever, which, I believe, can positively be cured by one or more of the drugs which we now possess, or by operative interference, or by using the tube, or it may be necessary to resort to two or even the three measures combined to cure some of the cases we meet."

I think the opening of the anterior part, either with the drill and the removal of part of it afterward, or by some other method, is better than the total removal of the middle turbinate. If you ever want to make a new instrument for nose and throat work and want to know whether there is any like it made, it has been said that all you need to do is to write to Dr. John Roe, and you will probably find that he has made the same thing a number of years before.

DR. W. S. ANDERSON, Detroit—I want to make a plea not to destroy more than is absolutely necessary in the removal of the turbinals. Only in a very few instances is it necessary to remove more than the anterior portion. It is possible, in many cases, to make an incision with a small knife through the mucous membrane, push it up, remove the anterior portion of the turbinal, drop down the flap of mucous membrane over it, and thus save the mucous membrane. There is too much of a tendency to unnecessarily destroy tissue. By being careful one can often save the mucous membrane, which is so often destroyed. The results, after the saving of the mucous membrane, are more satisfactory and prompt and the irritable scars are largely avoided.

DR. J. A. STUCKY, Lexington—I wish to protest against the crushing process for the removal of the turbinal. I have frequently found an osteitis following the use of this method. I would like to refer to the use of Dr. Holmes' little scissors. With them you can cut off an enlargement with a single cut while you would be adjusting a snare, and in this way take off two turbinates while adjusting the wire around one.

DR. GEORGE L. RICHARDS, Fall River, Mass.—I think an examination of the skulls here will show the portion necessary to be removed is the anterior portion, and if you use the spokeshave that is practically all you can remove. That is the operation I almost invariably do, only I do not do it with the spokeshave, for the removal of the anterior third is usually all that is necessary. Beside, I think a part of the middle turbinated is important in olfaction.

DR. B. A. RANDALL, Philadelphia—The essential basis of much of this work depends on the question of how we breathe and what is the respiratory tract of the nose. It is remarkable that such a matter should still be a matter of dispute. The failure definitely and finally to answer this seems to depend largely on the work of such men as Harrison Allen, who made very few mistakes, but who, because of study of comparative anatomy and the anatomy of the lower animals, was led to believe that we have an olfactory tract above and a respiratory tract below. Dr. Baker seems to take the same view. If you will take a few grains of magnesium powder and dust it in the air before the patient with normal, tidal breathing, and then find any of it, as drawn in and deposited on the mucous surfaces, below the level of the middle turbinate you will very much surprise me. The lower nasal meatus is not the respiratory but the drainage channel. You can, in this manner, very easily convince yourself that the upper olfactory tract is the respiratory tract of the nose. It is a pity that the matter is not clear in the minds of every one.

Dr. Baker's admirable cerasaur observes the only proper indication in that the cannula moves forward over the snare. I mention this because others may have only the other kind of snare, such as the Jarvis, and will find that it will slip off if the loop is drawn. But it is perfectly feasible for us to push forward the cannula over the snare, when we use any of those snares, and avoid all slipping.

DR. C. R. HOLMES, Cincinnati—I have made a crude sketch here. Some of you have probably read my article on the removal of the turbinated bodies, particularly the inferior turbinated, and in that is pictured also the manner in which the scissors are introduced. And, by the way, I wish to state that they are usually not made correctly. Meyrowitz does make them right, but I have seen some not made correctly. If they are too long they will fracture. I have had Meyrowitz thicken the point a little and strengthen it so that they answer better. I have had occasion to see how a little lack of knowledge in the use of an instrument may cause the condemnation of the instrument. I let my first assistant remove a turbinate. He is an able man, who has been with me for three years. I noticed him having some difficulty, and finally he said: "Doctor, that is too hard; we can not cut it." I found he had taken the middle turbinate in the middle of its body. The object of the scissors is to get up near to the wall, and that is the reason they are made in this shape. A pair of scissors has been made by another gentleman, that work at right angles, but they do not seem to me so applicable. By taking hold of it with a pair of forceps, after using the scissors, or, if necessary, following the scissors with the snare, we can readily remove the turbinate. Many a man, however, does excellent work with a clumsy instrument, because he is familiar with it. I would say it is advisable to buy the smaller size of these scissors, because they usually are sufficient. Dr. Randall has called attention to the fact that the air does rise and go through the upper passages. The air passes along the upper passages of the nose, and if you have obstruction there you must remove it. At the time my paper was written I had made 1,500 turbinectomies, and I have made 2,000 since then, but they were not all middle turbinectomies by any means.

DR. EMIL MAYER—I would like Dr. Holmes to make it a little clearer that two instruments are used, a right and left, and that the instrument is suitable for the middle turbinated but not for the inferior turbinated.

DR. HOLMES—Yes, that is true. For the removal of the inferior turbinated I prefer an instrument made by Betz.

DR. G. HUDSON MAUVEN, Philadelphia—When you are standing, the air passes naturally upward, and it would have to go almost at a right angle to get through the inferior passage of the nose. I have accepted Dr. Reynolds' explanation without having tried the experiment, for it seems to me that is the natural course for the air to take.

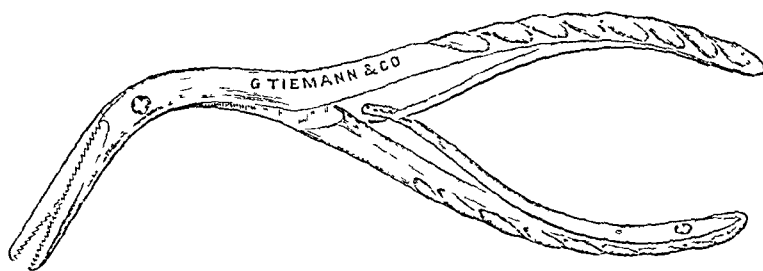
DR. HOLMES—Those who are interested in that subject will find that the experiment has been made. Cadavers were used and the inside of the nasal passages painted with iodine and powders of starch were used, with the cadavers in both the standing and sitting position.

DR. G. McAULIFFE, New York City—The inspiratory currents experiment, etc., quoted by Dr. Randall were mentioned in a French magazine some 8 years ago. Since then I have been interested in studying the middle turbinate. It is surprising how often we will find collapsed inferior turbinates with troubled respiration due to the encroaching middle turbinate. We then find it is usually the turgescence of the mucous membrane which it is necessary to treat. By snipping off the mucous membrane of the anterior end of the middle turbinate, we can relieve the symptoms of impaired respiration. The statement of Dr. Randall that the powder is not found on the inferior turbinate will be explained by the fact that the air enters the nose in eddies. The eddies started up by the slow inspiration carry the powder to the roof. There is no doubt that some of the air passes across the surface of the inferior turbinate. The quick expiration goes more through the inferior meatus. All the treatments that have

done any good have been those in which the space of the middle meatus has been enlarged. By enlarging the space in the middle meatus we relieve the stagnation of secretion and the difficulty of inspiration that these patients complain of.

DR. J. C. BECK, Chicago.—Two points I would like to make. In regard to the enlargement of the middle turbinate, nothing has been said about the effect of a large middle turbinate on the tear duct. After turbinectomy, you will find it stated that secondary hemorrhages, due to infection, may occur, where the proper cleansing of the nose is not attended to after operation. This is hemorrhage due to infection.

DR. IRA J. DUNN, Erie, Pa.—It seems to me appropriate to present these scissors, which I have found more satisfactory in nasal operating than any I have been able to find in the stock of the instrument makers. It was only after thorough search and failure to obtain scissors that would cut on the point strong enough to go through bone if necessary and still leave room for observation that these were devised. They only represent the best ideas of others. They are very strong, the blades are straight and compact, giving all possible room for observation. The hand is well out of the way of vision and situated so that, if necessary, a powerful grasp can be made. The edges are serrated, so that they do not slip back, but go cleanly through any tissue, cutting by one closure what is with difficulty accomplished by other scissors by a number of cuts. With more or less blood present, as is usual, several



cuts necessitate making a ragged and bruised surface. They enable one to cut off the posterior portion of a turbinated which otherwise usually has to be snared, because they do cut clear to the point. I hope they may be found useful by some of the members of the Section.

DR. CHARLES H. BAKER, Bay City, Mich.—I purposely omitted the method of removing the turbinal, because I described that at length in my paper, read last year, in which I credited Dr. Holmes' instruments. Dr. Holmes has said that the base is not always of a thin lamellar character, and sometimes the scissors may be used with difficulty. In those cases I have found the Gruenwald instruments and, particularly, the angular one which I have devised, very useful. I frequently find it advisable to remove the whole body of the turbinal. The polypi often occupy the posterior upper portion of the middle turbinal and you can not see them until you have removed the bone. That will explain the frequent failure to cure nasal polypi by persistent removal. I will acknowledge that I have sometimes secured the cure of polypi in this way. Failure is due to the polypi sometimes being out of sight, in the way I have described. Anatomically, the tear duct has no relation with the middle turbinate, since it opens behind the lower turbinate. As to synechia, they occur when you have not removed sufficient tissue or can not keep the patient under observation long enough to know that healing is complete before he passes out of your care. The trouble with the spokeshave is that you are trying to remove a curve by cutting on a straight line, and you often will not remove the entire body if you use the spokeshave.

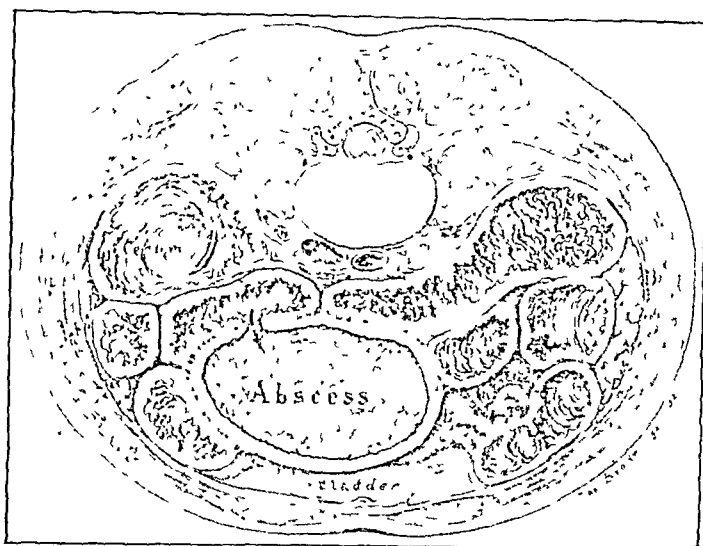
Age Limit Fixed by Dentists.—In the November *Digest* we stated that factory inspectors in Illinois were enlisting the aid of dentists to tell by the teeth the age of children who seemed too young to work in factories. There is now a bill before the Illinois legislature providing that no factory owner shall employ a child who can not produce a certificate from a dentist showing that he is over 16 years of age.—*Dental Digest*.

TYPHOID FEVER WITH PERFORATION OF THE BOWEL AND RECOVERY.

T. K. HOLMES, M.D.

CHATHAM, ONTARIO.

Miss S., aged 30, of good family and personal history, was attacked with typhoid fever Oct. 6, 1900, and the disease pursued a mild and favorable course until October 26, when she was seized with agonizing pain in the abdomen accompanied by severe shock. I saw her half an hour later and found her temperature 96, pulse 150, skin cold and wet and altogether presenting the symptoms of perforation. The nurse had given a hypodermic injection of morphin $\frac{1}{4}$ grain, and strychnin $\frac{1}{20}$ grain. Dr. J. H. Duncan saw the patient with me and we deemed it inexpedient to operate on account of her desperate condition. The strychnin and morphin were repeated at varying intervals to control the pain and sustain the heart, and normal salt solution was transfused beneath the skin every 12 hours, a quart being used each time. Tympanitis, which had been absent, soon became excessive, and vomiting was almost



Pelvic abscess due to perforation of a typhoid ulcer. A transverse section of the body just above the pelvic brim. Small portions of the bladder, uterus and of the left tube and ovary are seen, but the major portion of the pelvis is occupied by a large abscess. The intestinal loops are everywhere densely adherent to it and at the point indicated by the arrow is an opening between the loop of the small gut and the abscess. The omentum also was adherent to the surface of the abscess.

incessant for 24 hours. For ten days the patient was sustained entirely by rectal enemata. On the tenth day the bowels moved spontaneously, the bloating subsided and the stomach became tolerant of small quantities of peptonized milk.

Recovery after this occurred gradually, but when the bloating and tenderness had sufficiently subsided to permit examination a hard mass could be felt below and a little to the left of the navel, and could also be detected by pressing the finger through the vagina in the same locality. The mass was very hard and no fluctuation could be detected at any time. During the winter she gained slowly in strength, but her pulse never became normal and there was a slight rise of temperature toward evening.

In April, 1901, I consulted Dr. Cullen of Baltimore as to the propriety of operating on the patient, and asked him to perform the operation. This he did May 9, assisted by Dr. McKeough and myself. On vaginal examination a distinct mass could be felt occupying the pelvis, but not lying very low. On making an abdominal incision the intestinal loops were found adherent to the surface of this mass, which almost completely filled the pelvis. They were separated with considerable difficulty. In liberating one of these adhesions, evidently at the point of rupture, a perforation fully 2 cm. in diameter was found blending with the wall of the sac. This opening was closed with a continuous silk suture and reinforced by a second one. Further intestinal loops were freed, but it was impossible to remove the sac. The sac was punctured and about 700 c.c.

of most fetid yellowish white pus escaped. This had the characteristic fecal odor. The sac was scouted with gauze and a thick layer of granulation tissue removed from its walls. During this procedure the intestines were walled off carefully and after operation the intestinal fat was drawn up to and fastened to the upper part of the incision to prevent the intestines from dropping into the pelvis. A light iodoform pack was introduced around the sac and a loose drain placed in its interior.

The patient stood the operation well and in the evening the pulse was 116. The gauze packing was removed on the third day and the drain continued to be replaced daily until only a small sinus 3 inches deep remained. The hardness to be felt per vaginam did not completely disappear and much pain and tenderness remained at the left side of the cervix where the hardness was most marked.

A month after the operation this hardness had emptied itself into the sinus and a free discharge of pus was followed by freedom from pain and tenderness and fever. It was possible now to introduce a small glass irrigation tube through the sinus from the abdomen a distance of 5 inches downward and toward the left, and in this way the second abscess cavity was irrigated daily for several weeks, but drainage was so imperfect that I decided to make a counter opening into the vagina. I was thus enabled to pass a perforated rubber drainage tube from the abdominal surface through into the vagina and in this way to get better drainage and to irrigate the whole canal. By gradually withdrawing the tube the sinus finally closed and there was no further trouble. The patient has fully recovered her strength.

Special Article.

THE TYPHOID EPIDEMIC AT ITHACA.

(By Our Special Commissioner.)

I.

ITHACA, N. Y., March 10, 1903.

Ithaca is a town of about 13,000 inhabitants, with an additional student population of some 2,500. An excessive number of typhoid fever cases began to appear about Jan. 15, 1903, but it was not generally recognized that there was any unusual prevalence of the disease until Monday, January 26, when one of the local papers contained a statement that 73 residents of Ithaca were ill with "fever." During the week of January 26 to February 1 the epidemic progressed rapidly, and on February 2 it was stated that 237 cases of the fever existed in the city.

Up to the present date there have been about 91 cases among the resident students of Cornell University, and 12 of these have resulted fatally. There have been 8 additional deaths among Cornell students who had gone to their homes outside of the city; and it seems not unlikely that altogether 150 cases have thus far appeared among the student body. It is, at present, impossible to obtain exact information regarding the number of cases that has developed in the whole city. The number of deaths among the townspeople amounts to at least 24, and up to the present time more than 600 cases have probably occurred. The crest of the epidemic seems to have been reached in the latter part of February. Since the first of March the new cases reported have been relatively fewer in number and are of a much milder type.

The public water supply is distinctly responsible for

the outbreak. Those portions of the town receiving any of the water from Six Mile creek have suffered most severely, while the houses on the University campus and in its immediate neighborhood, including Sage College, with its 200 women students, in all constituting a population of more than 500, have been practically exempt. The one exception is a student who is known to have taken water in the infected part of the city.

It has been known for years that the public water supply was impure and wholly unfit for drinking purposes, and the present epidemic is the outcome of conditions which were clearly understood and the significance of which was urged on the authorities many times.

During the last week a material improvement in the situation has been effected by the energetic action of Dr. Soper, representative of the New York State Board of Health. Measures designed to diminish the opportunities for secondary infection have been vigorously pushed under his direction, and it seems likely that the persistent application of rational methods will speedily relieve the local tension and restore complete confidence to the stricken town. So much infectious material, however, still exists in and about the community that rigorous precautions will have to be continued for a long time to prevent a recurrence of the same epidemic conditions.

Much enthusiasm has been manifested locally in a project for obtaining water for the entire city from artesian wells sunk in the valley, but it is stated by high engineering authority that an adequate and satisfactory supply is hardly likely to be obtained from this source. Measures for improving the character of the present supply by rigorous control of the water-shed or filtration are also being considered. The university authorities have already placed a contract for the installation of a small mechanical filter to supply the university campus. It is expected that the filter will be in operation within 35 days. The present university supply (from Fall Creek), as has been pointed out, is not involved in the present epidemic, but is nevertheless liable to sources of gross pollution. Good fortune rather than good management has been responsible for the immunity of the district served by the supply, since the conditions of the water-shed do not differ materially from those of the basin of Six Mile Creek.

(To be continued.)

Smallpox Vesicles.—A writer in the *Lancet*, referring to the prevalence of smallpox in London, and the difficulty sometimes in mild cases of differentiating between this disease and chickenpox, calls attention to a well-known method by which the object can be attained. The vesicles in chickenpox are unilocular, while in smallpox they are multilocular, the practical result of this pathologic fact being that, if a chickenpox vesicle be pricked with a needle, its contents can be completely evacuated, and the cell will collapse; whereas in smallpox, if you make twenty pricks with a needle, the vesicle will not collapse, because, being multilocular, it is impossible to empty it. —*Medical Times*.

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SATURDAY, MARCH 14, 1903.

FAMILY CARE OF THE INSANE.

In the proceedings of the Twenty-ninth National Conference of Charities which has just appeared, there is an article on a system for the care of the insane so little known to Americans as to merit attention. It is written by Julia C. Lathrop, for some years a member of the Illinois State Board of Charities, who has personally observed this system in Scotland, France and Belgium. Briefly stated, this system consists of family care for certain classes of quiet patients.

The village of Gheel in Belgium is the classic instance of such care. Here for more than a thousand years patients have been received into the homes of the villagers as boarders, and at the present time the boarding of 2000 patients is the main industry in the commune with its 6000 inhabitants. About twenty years ago a similar colony for quiet patients was opened by the government at Lierneux in southern Belgium. This has prospered and now contains between 400 and 500 patients. In 1892 the French government began the care of women patients in the village of Dun-sur-Auron and in 1900 they began at Ainay a like undertaking for men. These colonies were only opened after the French had studied what is known as the Berlin system as well as the Scotch and Belgium methods. By the Berlin system patients are sent out from the asylums, as Dalldorf, to board in neighboring families under the medical supervision of the asylum physicians, and it is chiefly valued as a half-way home for convalescents, while the French, Belgian and Scotch systems apply primarily to chronic patients and offer a method of permanent care.

In 1900 there were 654 women patients at Dun-sur-Auron and Ainay was just opened; in 1901 Ainay had 100 men. The patients have the greatest possible measure of liberty. If they desire, they do work of various kinds according to their former occupations; but it is expressly understood that their labor does not belong to the families in which they live and that they can dispose of their time as they like. A medical superintendent is in charge of each colony and effective supervision is easy because the patients are so concentrated. In Scotland, family care has a still different development. Instead of gathering patients into large village groups, they are carefully scattered so that there shall not be enough in any one place to give it a distinctive character. In 1901 there were 2793 patients in private dwellings in Scotland, while the total number of insane was 15,899. It

is evident that family care is not suitable for all classes of patients, but the experience of Scotland and Belgium shows that in both of those countries about 20 per cent. of all the insane may be thus cared for.

The principal arguments in favor of the system are:

1. Humanitarian. The increased comfort and happiness of patients. A Scotch inspector says: "The freedom from irksome discipline and the social advantage of mixing with sane people of their own rank in life and on a footing of equality, has a wonderfully beneficial effect and has resulted in not a few cases of complete recovery." The Belgian and French authorities tell the same story.
2. Economy. The daily expenditure per capita in asylums of the Department of the Seine is 58 cents. At the village of Dun it is 28 cents. "In Scotland the current cost of boarding-out is about two-thirds that of hospital care," and this estimate does not take into consideration the enormous cost of hospital plants.

The most obvious objection to this system would be the danger of violence to the families, yet Drs. Peters and Duperon in Belgium, Marie and Lwollf in France, agree in stating that instances of violence are of phenomenally rare occurrence, while in Scotland it is authoritatively stated that "during the 43 years in which this system has been in operation there has been but one serious assault committed by a boarded-out patient"—a record of amiability scarcely to be equaled by a like body of sane boarders for the same period, were the truth known.

Miss Lathrop gives an instance of family care in Scotland and draws a contrast between it and the American system. In the course of a visit to one of the Scotch villages, she found a male patient sitting in the cottage of one of the neighbors tending a baby, and was told that this baby was the object of John's devoted care. "Not long after, I was visiting an American asylum of the usual baronial castle type and in a locked ward of rather violent patients an elderly woman was knitting a pair of socks. The attendant said she could live perfectly well outside 'if she only had some one to look after her a bit.' In the main building a few hundred feet distant, apparently, but really as remote as Europe, she had heard that there was a new baby in the family of one of the staff physicians, and sent a pair of socks of her own knitting to this child whom, probably, she would never see. She was far more expensively housed, clothed and fed than John; the great building in which she lived was set in the midst of a splendid park instead of a humble cottage garden, but as for me or any kin I would choose the lot of John."

THE LIMITATIONS OF THE CYTOTOXIC THEORY.

Just now the cytotoxin occupies the center plank of the stage of medical research. The antitoxin is ancient history, and even the hemolysin and the bacteriolysin are falling behind. There is probably no organ or tissue that is not now being injected in emulsified form into the midst of the complacent goat, the sedate goose, the

rabbit or guinea-pig. We may look soon for a deluge of reports on cytotoxin work, and we should await them with interest, for present indications are that the results may be either very great or very small. It is the simplicity of method that undoubtedly accounts for the rapid and general invasion of the field. One simply takes some particular organ or tissue, preferably one not already studied, grinds it up with sand and aseptic precautions, extracts it with salt solution, and injects the product into the selected animal. After a number of such injections at intervals of a few days the injected animal is bled, the serum separated from the corpuscles and injected into an animal of the same species as those that have furnished the tissues; and then the last animal is studied, both alive and dead, for evidences of effects of the serum.

The earlier reports that have been published have not been harmonious, and it is hard to know what to expect; but because of the large number of workers we may reasonably anticipate that it will not be long before enough facts have been established to set the work on a firmer basis. That it is an enticing study there can be no doubt, and from the standpoint of science it should be worked out to the end. How much is to be expected in a practical way is another matter, and it may be well for the benefit of those who are not in a position to appreciate the exact situation to call attention to some of the obstacles that may prevent practical application, in order that too great expectations may not arise. The first is the fact that to a large extent results are being obtained with heterolysins rather than with autolysins. By this is meant, for example, that in experiments on neurotoxic serum a goose is immunized with nervous tissue from dogs, and that its serum is then injected into dogs to study its effects. It is evident that the conditions so established are not the same as with serum obtained from dogs treated with dogs' tissues. And even in the latter case there is still a gap before we reach ordinary conditions of human pathologic processes, in which the toxins, if produced at all, would arise within the body of the animal they affect. As might be expected, the general rule is that the more remote in nature the two kinds of animals are the more activity will the cytotoxic serum possess; therefore, experiments using animals of the same species have yielded little result. It is evident that as matters now stand we can not apply many of the results obtained with heterogeneous serums in explaining the genesis of pathologic processes, for these must, if due to cytotoxins produced by cell immunization, be due to cytotoxins produced within the body of the very animal that they attack. However, there is some hope in this direction, for a few studies of autocytolysis have indicated that it may occur; these have concerned particularly the kidneys.

The earliest work, in which destruction of such cells as ciliated epithelium was observed, suggested the possibility that an immune serum against cancer might be

produced, and attempts have been made in this direction. Here one great obstacle lies in the difficulty of securing material with which to immunize the animals that are to furnish the serum. To treat a single case of cancer of the breast, for example, would require the amputation of many other cancers of the breast to secure material for immunization. Furthermore, when we come to consider cancers in sites where they are generally badly infected, as the stomach or uterus, we should undoubtedly find difficulty when we inject our animals. Another therapeutic possibility lies in the anticytotoxic serum, which is obtained by immunizing animals to the cytotoxic serum. Here again the application to human medicine is impossible, for where are we to find subjects which will produce our anticytotoxic serum, even if we were able to procure human material to immunize animals in the first place?

Our only object in making prominent these difficulties in the practical application of this particular line of work is to caution against the evident tendency of those who are not fully informed to draw unwarranted conclusions or predictions. There is probably no investigator who does not appreciate the situation fully. Undoubtedly there are possibilities that means may be found to evade the obstacles, and great advances result. But even were there no hope evident that any clinical use might come of all this work it is the right of science to expect the study to be pushed to completion, if for no other reason than that there are questions still unanswered. We have never the right to ask of science, *cui bona?*

A NURSES' STRIKE.

The trained nurses in a New York hospital recently struck and left the institution badly in confusion for a time. By aid from other hospitals the trouble was tided over without serious consequences, but the occurrence is an unfortunate one and does not tend to elevate the opinion of the profession as regards the strikers. The affair curiously paralleled certain labor union strikes. The alleged or apparent cause was the introduction among them of a non-diplomaed assistant who had not, or was not entitled to wear, the nurse's uniform, and it is alleged that when they left, the striking nurses or some one among them destroyed records, mixed up medicines, deranged glasses and bottles and concealed keys of instrument cases. The only thing apparently lacking was the picketing of the hospital and slugging, or perhaps hair pulling and scratching of their substitutes. Next to the physician's, the nurse's should be an altruistic profession, but these particular nurses seem to have had a very low ideal of their duties and status. It is to be hoped that the action of these nurses will not be imitated by others, but that, if the facts are as charged, they will be promptly condemned and repudiated by their associates.

SCIENCE AND REST.

An opportunity to escape from the turmoil of this commercial world is often eagerly sought by the phy-

sician no less than by others. With the omnipresent mail and telegraph pursuing him, he begins to find it hard to secure a place for quiet recreation. Unless he can take an ocean voyage, the busy physician sometimes solves the problem by stealing away into the wild woods, his location being known to but one trusty friend. An ocean voyage has been long considered an ideal of freedom from care. Here the brain-fagged worker could read no daily paper, hear of no startling crime or commercial upheaval, receive no urgent letter or telegram on business matters, and the days passed amid quiet but novel and interesting scenes. But the quiet of this scene is threatened. We are told that while on her voyage many miles from land a ship received news by wireless telegraphy, a newspaper was printed and laid by the breakfast plates of the passengers. So it may not be long ere the busy physician can take his ocean voyage, but yet not get away from his g. p.'s. Hawaii, once called "the paradise of the Pacific," and delightfully free from worry because all outside news was at least a week old, is now connected by cable and is no longer in "charming isolation and yet accessibility." Thus by the advance of science the world becomes smaller and smaller until there will be no place left whither weary man may escape for rest.

COMPELLING TEMPERANCE BY LAW.

The saying that "You can not make a man temperate by act of parliament" has evidently a British origin and there has certainly been no tendency heretofore in that dominion toward prohibitory laws. Notwithstanding this, it seems to be a fact that one of the most stringent anti-liquor laws has just gone into effect there, and the consequences will be worth watching. Instead of being prophylactic against drunkenness in the way of prohibition, it is directly punitive. Drunkenness itself is made an offense, whether the individual is disorderly or not, and repeated convictions make the offender, as it were, a habitual criminal subject to compulsory detention for a considerable period up to three years. The appearance before the court and conviction more than a certain number of times, moreover, puts the individual on a published blacklist, and the personal responsibility of dramsellers as regards those thus listed is to be stringently enforced. The working of the law will be watched by all who are interested in the reduction of the evils of intemperance. If inebriety is a disease, as some claim, the provisions of the law would appear to be harsh, unless, indeed, we assume that, though a disease, it does not diminish responsibility. Probably the British magistrates will accept this view if the disease theory is pleaded before them, and it would certainly be unreasonable to permit disease to be a license to commit offenses against good morals and public welfare. The London and Glasgow police will have their hands full if they construe the law with any strictness and the licensed dealers will have to walk in narrower paths than they have been accustomed to if they wish to keep out of trouble.

LIFE-SAVING INVENTIONS.

The prevention of loss of life has been the subject of a number of recent inventions and some of these appear

to promise something of real value. Anything that will reduce the amount of suffering and loss of life incident to travel is in line with the physician's plan of labor. One of the measures proposed is the use of acetylene to prevent the sinking of ships. The inventor proposes the placing of packages of calcium carbide throughout the lower parts of the ship in connection with collapsed gas bags. On the entrance of water it will reach the carbide and generate acetylene gas, which will inflate the bags and keep the ship afloat. The inventor has not told us how he proposes to prevent the explosion of the gas, or its ignition. Some of us might prefer to go down than up, or to drown than burn. Turning to railroads, we find a telephonic connection proposed between different engines by means of a third-rail system. On the approach of one train to another a signal is given, the engineer may then stop and telephone and learn the conditions. A more noteworthy plan is a system holding the drive wheels of the locomotive by magnetism to the rails. It is urged that this will prevent all accidents in case brakes fail to work on hills, in case slippery rails prevent the stopping of trains and in many cases where trains would otherwise leave the track. But the most promising invention is one by which electric connection is established through the rails to the engine so as to control the throttle of the locomotive. Whenever a locomotive approaches too near to another, a short circuit is established which automatically shuts the throttle, applies the brakes and stops the train. This would seem to remove an element of human fallibility. If any of these pass beyond the experimental and theoretical stage, where so many inventions linger, they will be welcomed into the equipment of the railway systems.

JUSTIFIABLE SUMPTUARY LEGISLATION.

The protest against "sumptuary legislation" is the war cry of the man who considers it an inalienable right of the individual to eat and drink what he pleases. It is frequently raised and for selfish ends. A similar protest is that against legislation that seeks to have those who treat disease qualified to some extent. One of these protests was by Mark Twain, who urged that a man should not be limited in his choice of a physician. Since the legislation was to restrict incompetence it was equivalent to saying that a man should be allowed to die in any way he chooses. This would not be bad for a joke, but no joke was intended. A man is emphatically not privileged to die as he chooses, nor to eat and drink what he pleases. It is now recognized as a right of the community to forbid the sale of liquor to the habitual user of intoxicants, and the sale of cocaine, of carbolic acid and of other drugs where proper use is not intended, and the sale of embalmed beef and of salicylic-acid-preserved food. No one disputes the right. The latest curtailment of alleged sumptuary rights is the action of the Board of Health of Ithaca, N. Y., the scene of the recent typhoid epidemic. It is made a misdemeanor, punishable by \$50 fine or fifty days in jail, for anyone to drink unboiled city water or to furnish it to others for that purpose. Who will question their right to take this action? Two score homes bereaved, every available physician overworked, hospitals full, the work of a great university almost suspended, hundreds of lives threatened and the future health of

the locality in jeopardy from the pollution—the community has indeed the right to limit individual acts that add to these perils. The rights of man and the rights of men are coming more and more to be interpreted in the light of ultimate results and for the greatest good to the greatest number.

Medical News.

ALABAMA.

College To Be Renovated.—A bill has been introduced in the house appropriating \$20,000 for the renovation of the building of the Medical College of Alabama, Mobile.

Smallpox Among Medical Students.—The health officials of Mobile have discovered eleven cases of smallpox among students of the Medical College of Alabama, Mobile.

Rhett Memorial.—The new operating room at the City Hospital, Huntsville, erected and equipped by the City Council in memory of the late Dr. R. Barnwell Rhett, Jr., was recently opened.

Personal.—Dr. T. Chilton Thorington, Montgomery, has been appointed captain and assistant surgeon, S. T. Ala., and assigned to the Second Infantry, vice Dr. Walter S. Britt, Eufaula, resigned.—Dr. Henry M. Hunter, Union Springs, has located in the City of Mexico.—Dr. William M. Faulk, who has been a member of the staff of Bryce Hospital for the Insane, has resigned, and will practice in Tuscaloosa.

GEORGIA.

The Cocain Question.—In a trial at Atlanta, March 3, the fact was elicited that at one drug store in that city more than 3000 prescriptions for cocain had been filled within two months.

Want Scholarships.—Applications are pouring in on the governor for appointment to scholarships in Augusta Medical College, under the law whereby the governor is authorized to name two persons from each of the eleven congressional districts of the state for free scholarships at this institution.

Society Victorious.—The Supreme Court has confirmed the decision of the lower court for the defendants in the case of E. S. E. Bryan versus the Atlanta Society of Medicine. Bryan brought action against the society for \$10,000 damages on the ground that his name had been presented to the grand jury as an illegal practitioner of medicine.

Violation of Cocain Law.—Dr. O. H. Snider, Atlanta, arraigned on the charge of distributing free packages of cocain to negroes, was found guilty, February 25, and fined \$500, a thirty days' sentence in the stockade, and bound over to the city court on a \$1,000 bond. On his promise not again to offend, the fine was reduced to \$100.—W. C. Moran, Atlanta, on March 3, was fined \$100 and costs for dispensing cocain in a box which did not bear the red label required by law.

ILLINOIS.

To Repeal Law of 1901.—Representative Miller has introduced a bill to repeal the law of 1901 requiring reports of births and deaths and the recording of the same, and the registration of interments or other disposal of dead bodies.

Senate Bills.—A bill has recently been introduced in the senate giving the osteopaths representation on the State Board of Health; another abolishing the State Board of Health, and a third abolishing 56 of the 61 trustees of the state charitable institutions and vesting full control of these institutions, 10 in number, in a state commission of public charities.

Medical Practice Act.—On March 6 Representative Wheeler introduced the new medical practice act proposed by the Illinois State Medical Society. It creates a State Board of Medical Examiners, consisting of seven members, who shall be appointed by the governor with the advice and consent of the senate. The appointments are to be made from persons nominated by the state medical societies, and every incorporated society having an actual membership of not less than 100 licentiates in medicine and surgery and embracing membership from at least twenty counties may submit nominations. The term of office is to be seven years.

Smallpox.—During February 180 cases of smallpox were reported to the State Board of Health from 45 localities in 34 counties. In 1902 there were about 4,000 cases in the state in February, and the diminution is undoubtedly due to the per-

sistent efforts of the State Board of Health to enforce vaccination. Difficulty is still found in handling the disease, because it is often not at first recognized as smallpox. Spread of the disease in many localities is due to the refusal of the local health authorities to accept the diagnosis of the attending physician. They call on the State Board of Health for an inspector before taking action, and many may be exposed before he comes.

Chicago.

Health Department Appropriations.—The Department of Health estimated its needs for 1903 at \$188,000; the city comptroller made an estimate of \$188,019, and the budget calls for \$188,000.

New Hospital Site.—It is announced in the daily press that negotiations are in progress for the sale of the old West-Side baseball park, 560 by 640 feet, to Cook County, for \$125,000, to be used as the site for a contagious-disease hospital.

Smallpox.—During the week ended March 7, 13 cases of smallpox were discovered; two patients died at their homes and 11 were removed to the isolation hospital. There are now nearly 60 patients at the hospital, and 20 deaths have occurred.

Physician Sued.—In the suit of Mrs. Parmelia J. Davis against Dr. Edwin H. Pratt for \$3,000 damages on account of an operation alleged to have been illegally performed on her, by the defendant, without her or her husband's consent, the court gave judgment for the plaintiff for the full amount.

Fewer Deaths.—There were 118 fewer deaths reported during the week ended March 7, than during the previous week—a decrease of 16.5 per cent., says the Bulletin of the Health Department. The mortality rate is still excessive, however, when compared with that of 1902. The total deaths for the week numbered 595, as against 713 for the last week in February and 515 in the corresponding week of 1902.

Physicians Protest.—Physicians attached to the county agent's office protested, March 2, against the new method of paying for their services. They were formerly paid \$50 a month. The new appropriation provides that they shall be paid \$1.50 a call. The chairman of the finance committee said it was the intention to redistrict the city and to so systematize the work that long trips would be unnecessary.

INDIANA.

Osteopath Bill Defeated.—On March 4 the senate defeated Senator Johnston's bill, providing a separate board of examination and registration for the osteopaths of the state.

Suit Settled by Death.—The case of James M. Shelley against Dr. George W. Spohn, Elkhart, for \$10,000 damages on account of alleged improper treatment of cancer, was abruptly terminated, March 9, by the death of the plaintiff.

Unclaimed Cadavers for Dissection.—The governor signed the bill giving unclaimed bodies to medical colleges for dissection on payment of expenses of shipment, on February 26. As this law repeals "all laws within the purview of this act," it includes the law under which resurrectionists were convicted, but it is believed that as the bill became a law after the indictments were returned, it will have no effect on these cases.

Disease in January.—Smallpox for the twenty-fourth consecutive month leads the list as the most prevalent disease, 921 cases, with 50 deaths, were reported. The increase in smallpox, as compared with the corresponding month last year is enormous, and was predicted by the State Board of Health. There was a 98 per cent. increase in number of cases, 80 per cent. increase in area covered, and 90 per cent. increase in the number of deaths. The order of prevalence of diseases was as follows: Smallpox, tonsillitis, bronchitis, pneumonia, rheumatism, influenza, typhoid fever, scarlet fever, pleuritis, diarrhea, intermittent fever, diphtheria and croup, erysipelas, whooping cough, measles, inflammation of bowels, puerperal fever, dysentery, cerebrospinal meningitis, cholera infantum, and cholera morbus.

January Deaths.—There were 2,910 deaths reported in January—a death rate of 13.6 per 1,000. The greatest number of deaths, 410, was caused by pneumonia, and the next, 302, by consumption. Typhoid fever caused 64 deaths, diphtheria 53, scarlet fever 23, whooping cough 19, cerebro-spinal meningitis 33, influenza 39, cancer 88, violence 129, and smallpox 50. The city death rate was 16.8, and the county death rate 11.9 per 1,000. Compared with January, 1902, there is an increase of .4 in the death rate for January, 1903. There is a decrease in the death rate from consumption of 16.4 in 100,000. There is also a decrease in typhoid fever, pneumonia, influenza, violence

and smallpox. There were only five deaths from smallpox in January, 1902, which compared with 50 in January, 1903, shows a very great increase.

LOUISIANA.

State Board of Health.—Dr. Edward Souchon, New Orleans, has been re-appointed president of the board, and Dr. Joseph S. Stephens, Natchitoches, and Percival B. McCutcheon, New Orleans, members.

Charity Hospital Report.—The annual report of the hospital shows revenues for the year of \$134,799.14 and expenditures of \$126,042.15, leaving a balance of \$8,756.99. During the year the hospital received \$34,895.21 from donations and legacies. There were 6,793 patients admitted during the year.

Near a Million for Tulane.—By the will of the late A. C. Hutchinson, the bulk of his estate is devised to Tulane University Medical Department. The estate is appraised at \$991,169. The brother of the deceased has begun suit at New Orleans to break the will on the ground that the university is not competent to receive the bequest.

Personal.—Dr. Arthur W. D. Roaldes, New Orleans, has been made an officer of the Legion of Honor of France.—Dr. Jefferson D. Bloom has been re-elected house surgeon; Dr. James M. Batchelor, first assistant house surgeon; Dr. Joseph A. Danna, second assistant house surgeon; Dr. Oliver L. Pothier, pathologist, and Dr. Maurice J. B. Couret, assistant pathologist, of Charity Hospital, New Orleans.

MARYLAND.

The Shooting at Westport.—Dr. Houghton Boxley was fined \$10 and costs for firing a pistol at Dr. John Floyd at Westport, a suburb of Baltimore, February 27. He claimed that he shot in self-defense. He was bound over to keep the peace for six months.

Deaths and Disease.—There were 202 deaths in Baltimore for the week ended March 7, an annual rate per 1,000 of 18.63. There were 37 deaths from pneumonia; 9 from bronchitis; 6 from la grippe, and 3 from measles and 2 from diphtheria. A few new cases of diphtheria and measles were reported, but the epidemic of the latter has almost subsided.

Dr. Flexner's "Bacteriolysin."—Dr. Flexner is engaged in manufacturing his dysentery antitoxin, or "bacteriolysin," as he terms it. Trial will be made of this antitoxin this summer at the Wilson sanitarium near Baltimore. In about 2 months Dr. Flexner will institute a course of instruction for about 30 young men at his laboratory in Philadelphia, on the identification of the dysentery bacillus, so that during the summer a very widespread study of the summer diarrheas of children in this country may be made. It is rumored that Dr. W. G. MacCollum, associate professor of pathology at the Johns Hopkins Medical School, may succeed Dr. Flexner at the University of Pennsylvania.

MASSACHUSETTS.

Foot and Mouth Disease.—Dr. A. J. Peters, chief of the cattle bureau, having discovered that a case of "foot and mouth disease" had been imported from New Hampshire, has arranged with the Boston and Maine R. R. that no more cattle, sheep or swine shall be brought into Massachusetts from that state over that system till the danger from the infection is over.

Personal.—Dr. W. R. Brinckerhoff, assistant pathologist of the Boston City Hospital, will soon go abroad for a year's study.—Two changes in the staff of the Massachusetts General Hospital are the resignation as visiting physician of Dr. William L. Richardson, and the appointment as visiting surgeon of Dr. Charles L. Scudder.

Faulkner Hospital Opened.—The Faulkner Hospital, Jamaica Plain, Boston, which has been built and fitted up at an expense of \$100,000 by Dr. and Mrs. George Faulkner as a memorial to their daughter Mary, was opened for inspection February 25, and for the care of patients March 9. The hospital has 25 beds and is thoroughly equipped. Dr. Frank Balch and Henry Jackson are in charge, and are assisted by a staff made up from the physicians of that vicinity.

Bequests to Hospitals.—By the will of the late Jacob H. Hecht more than \$50,000 is given to charities. Among the hospitals thus aided are the Massachusetts General Hospital, Boston Lying-in Hospital, St. Mary's Lying-in Hospital, Boston Emergency Hospital, and the Carney Hospital.—The Children's Hospital, the Perkins Institution for the Blind, the Eye and Ear Infirmary, the Carney Hospital, Massachusetts General Hospital, Boston City Hospital, School for Crippled

and Deformed Children and the New England Peabody Home for Crippled Children are among the beneficiaries of the will of the late W. I. Bolton of Chelsea, Mass.

MISSOURI.

Moves into New Quarters.—The medical department of the Missouri University, Columbia, moved, February 24, into the new \$40,000 building recently erected for it.

Influenza Raging.—It is reported that there are 15,000 cases of influenza in St. Louis. Nearly ten per cent of the 700 patients in the City Hospital are said to be suffering from the disease.

Hospital Saturday and Sunday.—The annual report of the Hospital Saturday and Sunday Association of St. Louis shows collections of \$24,732.66, with expenses of \$755.09. The association distributed \$23,000 among the associated hospitals of the city.

College Commencements.—Central Medical College, St. Joseph held its graduating exercises, February 27. Dr. Thompson E. Potter delivered the faculty address, Dr. Edward T. Molzahn was valedictorian, and the diplomas were presented to a class of 24 by Dr. Moritz F. Weyman, president of the college.—On February 28, a class of 14 received diplomas from Ensworth Medical College, St. Joseph. Dr. Wallace B. Deffenbaugh delivered the address on behalf of the faculty, and Dr. Thomas H. Doyle, president of the college, conferred the degrees.

New Bills.—By Mr. Baker, to establish a hospital in State Hospital for the Insane, No. 1 Fulton, for the detention and treatment of dipsomaniacs and inebriates and those addicted to excessive use of narcotics.—By Dr. Horace D. Quigg, Cooper County, providing for the appointment by the governor of three separate medical boards, one for each of the three schools of medicine, each board to consist of five members and they to examine applicants for their respective schools and issue licenses to those found qualified.—By Mr. Dorris of Oregon, to require the State Board of Health to issue certificates to practice medicine to all graduates of reputable medical colleges without examination.—By Mr. Brown, Ozark, to allow graduates from a four-year course medical college to practice medicine without examination, provided they apply for authority to practice within three months of their graduation.

NEW YORK.

Hospital for Crippled and Deformed.—The New York State Hospital for the Care of Crippled and Deformed Children, Tarrytown, has issued its report for the year ended Sept. 30, 1902. During this period 35 patients have been treated, of whom 10 have been discharged. About 150 applications for admission have been made during the year, but owing to the restricted accommodations the larger portion could not be accepted. If the hospital had been equipped with 5500 beds the surgeon-in-chief says he could have filled them in a month with deserving patients.

State Charities Aid Association.—The thirteenth annual report of this association shows that in the past year 1,158 children have been placed in families at an expense that is a mere trifle compared with that which would have been incurred if these children had been cared for in institutions. This, of course, takes no account of the good to the children and to the community resulting from family life for young children as compared with rearing in institutions. A committee of the association co-operates with the Department of Charities of New York City in caring for motherless infants. In this way 112 motherless babes were cared for in the past year, while in the past four years 127 such infants have been provided with permanent homes before reaching the age of two years. By the same means the mortality among foundlings has been reduced from over 95 per cent. to less than 11 per cent. The total number cared for since the beginning of this work in 1898 is 303.

Typhoid Legislation.—Senator Stewart of Ithaca with an interest in the public health quickened by the fact that his wife is ill with typhoid at his home, has introduced into the legislature a bill aiming at preventing the pollution of the waters of the state. The bill provides that permission will hereafter have to be obtained from the state commissioner of health for any person, shop, factory or industrial establishment to discharge sewage or other putrescible matter into the waters of the state after the same shall have been forbidden by any local board of health or other public authority. The penalty for the discharge of sewage from any public sewer system without a permit is \$500, and \$50 a day while the nuisance is maintained.

The penalty for discharging into any of the waters of the state any other matter prohibited by this bill is to be \$25 and \$5 a day for each day the offense is continued. At the request of Dr. Frederick Holme Wiggin, president of the New York State Medical Association, the committee on legislation of that body is actively to support this bill.

New York City.

Skene Avenue.—The suggestion is made that the name of the late Dr. Alexander J. C. Skene be perpetuated by the naming of some suitable avenue in Brooklyn.

Found Lectureship.—Dr. and Mrs. Christian A. Herter have given \$25,000 to Johns Hopkins University, Baltimore, for the establishment of a lectureship in medicine.

Charges Unfounded.—The sensational charges recently made by an alcoholic patient in Bellevue Hospital against the nurses have been carefully investigated and, at the request of the district attorney, the case was dismissed because the charges were found to be without foundation.

Columbus Hospital.—This institution is to be enlarged shortly by the addition of new buildings, adjoining the present property, the ground for which has already been purchased. The erection of these new buildings will increase the capacity of the hospital from 98 to 150 beds. Funds for the erection of the buildings are available, which will be sufficient to provide for modern equipment of the new wards.

A Nurses' Strike.—Nine of the trained nurses of the New York Eye and Ear Infirmary left the hospital on the refusal of Dr. Richard H. Derby, the executive surgeon, to accede to their demand that the new head nurse and an objectionable assistant be removed. For a short time the service of the hospital was badly crippled by this high-handed action, but several nurses were sent from other institutions to render assistance in the emergency.

Suit for Death in Narcosis.—In the suit brought against Drs. John A. Wyeth and W. H. Landon White by Mrs. Alice Wood, as administratrix of the estate of her son, Robert Wood, deceased, for damages sustained by him by reason of alleged negligent treatment, the Appellate Division of the Supreme Court dismissed the case on its merits. The boy, who was being operated on by Dr. Wyeth for an infected wound of the arm, died under chloroform, and suit was thereon instituted. It will probably be carried to the appellate court.

Personal.—Dr. Frederick C. Keller has been appointed attending physician to Columbus Hospital, to succeed Dr. Farquhar Ferguson, who has been made consulting physician.—Dr. G. A. De Santos Saxe has been appointed assistant pathologist to Columbus Hospital.—Dr. George L. Peabody has resigned his position as professor of materia medica and therapeutics in the College of Physicians and Surgeons.—Dr. John Harrigan has been elected president of the staff of St. Mary's Hospital, Brooklyn, vice Dr. John J. Byrne, deceased.

Buffalo.

Personal.—Dr. Edward L. Frost has been appointed physician to the Erie County penitentiary, and Dr. Prescott Le Britien physician to the jail.—Dr. Marshall Clinton has been appointed attending surgeon at the Buffalo Hospital, Sisters of Charity.

Foreign Bodies in Stomach.—Dr. H. R. Gaylard recently made a gastrotomy on a patient at the Erie County Hospital, when the following articles, numbering 689 and weighing 2 pounds and 3 ounces, were removed from the stomach: One piece of chain 3 inches in length, 41 knife blades, 2 wire nails, 142 screws, 3 nuts, 452 sharp tacks, 48 shoemaker nails, 144 grammes of glass.

Typhoid Menace to Buffalo.—In an interview, Dr. Daniel Lewis, state commissioner of health, states that the condition of typhoid fever at West Seneca should greatly concern the people of Buffalo, for the reason that Buffalo has so many more people to be affected. The only remedy for Buffalo is to filter its water supply, and he is of the opinion that a filtering plant could be established for \$750,000.

Marine-Hospital Site Selected.—Surgeon-General Wyman has reported to Representative Ryan in Washington the selection of about three acres of land on Main street, Buffalo, between the Providence Retreat and the Deaf and Dumb Institute, as a site for the new United States Marine-Hospital. The selection is based on the recommendations of Dr. L. L. Williams and Francis B. Wheaton, who were appointed a commission to act with Dr. Eugene Wasdin. It is one of the highest points

of land in the city. There is stone three feet below the surface and excellent drainage.

OHIO.

Fire in Dayton.—A loss of about \$1,500 was sustained by Dr. Dagobert A. Scheibenzuber, whose house was much damaged by fire, February 17.

Semi-Centenary in Practice.—On February 20, Dr. Bernhard Krause, Cleveland, celebrated the fiftieth anniversary of his graduation in medicine from the University of Göttingen, Germany.

Serious Accident.—Dr. Abijah J. Miles, Cincinnati, on February 27, while crossing a street, was struck by a street-car, causing a deep scalp wound in the back of the head and a compound fracture of the skull.

PENNSYLVANIA.

Concealed Smallpox.—The board of health of Chester will order the arrest of two hospital patients on the charge of their having concealed the fact that they had smallpox.

Must Not Use Name Without Permission.—The legislature has passed a law prohibiting the use of a person's name or picture as a testimonial for a patent medicine without the individual's consent.

Norristown Hospital Crowded.—The State Hospital for the Insane at Norristown is so over-crowded that 205 men and 192 women have to sleep on cots in the corridors. The inmates number 1,012 men and 1,097 women.

Diphtheria Unreported Quarantines Hospital.—Charity Hospital of Norristown, containing 32 patients and about a dozen nurses, has been placed under strict quarantine by the board of health, because a case of diphtheria which developed in the institution was not reported for several days.

Osteopathic Examiners.—The house of representatives recently gave a hearing to advocates of a bill to provide for an osteopathic board of examiners to grant license to practice osteopathy to those who have studied twenty months—five months in four different years—and have graduated from an osteopathic college.

Philadelphia.

Hospital Bequest.—Jefferson Medical College Hospital recently received a bequest of \$5,000 from the estate of the late Thomas Elkinton.

Hospital Applies for Charter.—Frankford Hospital, occupying temporary quarters on Frankford avenue, has applied for a charter. As the nearest hospital is three miles distant, the new hospital will supply a need, especially for the treatment of emergency cases. The hospital now has accommodation for 40 patients.

Typhoid Not Abated.—As shown by the official report, the typhoid fever epidemic has not abated. For the week ended March 7 there were 254 new cases, as compared with 255 for the previous week. The general death-rate in the city is still high, there being 614 deaths, as compared with 508 for the corresponding week of last year.

Personal.—On March 3, Dr. A. Palmer Dudley, New York, operated in the gynecologic clinic of Jefferson Hospital. In the evening he gave an address to the members of the E. E. Montgomery Gynecological Society and their friends, and was afterward a guest of honor at the annual banquet of the society.—Dr. C. S. Ely has resigned as resident physician at Jefferson Hospital, having passed the examination for admission to the Navy.

Regulation of Barber Shops.—A meeting was recently called in Philadelphia by the International League of Barbers to further the passage of a bill by the Pennsylvania legislature providing sanitary regulation of barber shops. The proposed law provides for the licensing and registration of barbers, and requires their better education. It also provides for a board of examiners, of five members, who shall have been actually engaged in the business at least ten years. The movement is supported by the International Union of Journeymen Barbers.

Homeopaths Want Hospital.—In a recent message to the council, Mayor Ashbridge calls attention to the fact that for several years homeopathic physicians have been asking recognition on the medical boards of the Philadelphia Hospital; that since the enactment of an ordinance removing the Municipal Hospital from its present site, committees representing the homeopaths have several times waited on the mayor with petitions that, on removal of the institution, the present municipal hospital buildings and grounds be turned over to

them for a public homeopathic hospital for the treatment of non-contagious diseases. The message closes as follows:

In compliance with this request, I have the honor to lay the suggestion before your honorable bodies, and would ask that you have it referred to the appropriate committee. Inasmuch as a very large proportion of our citizens believe in the homeopathic method of treatment, I am of the opinion that the suggestion merits the very best consideration at your hands.

GENERAL.

Pension for Mrs. Walter Reed.—Congress has passed a bill appropriating \$125 per month during her lifetime as a pension to Mrs. Emily Lawrence Reed, widow of the late Major Walter Reed, U. S. A.

Plague Spreads in Mexico.—A few cases of plague have appeared at points near Mazatlan, viz., El Oso, Villa Union and Lapaz. The outbreak seems to have been entirely subdued at El Oso by vigorous measures. The sanitary officials who burned plague-infected houses at Villa Union were mobbed. None was seriously hurt. Soldiers were sent there and precautions taken against the further spread of the disease.

The Diphtheria Antitoxin Question.—By invitation of Prof. Joseph P. Remington, chairman of the committee of revision of the United States Pharmacopeia, eight prominent physicians and bacteriologists recently met with him to consider the advisability of inserting diphtheria antitoxin in the Pharmacopeia. The state boards of health of New York, Pennsylvania and Massachusetts, the Army and Navy, and two prominent manufacturing firms were represented in the meeting. No definite decision is announced.

That Decreased Birth Rate.—Congress has passed a resolution recommending that state and municipal authorities co-operate with the Census Bureau in securing uniform and complete registration of births and deaths. It is said that the United States is behind European governments in this respect. Further statistics on the birth rate are appearing in the lay press, and some of these are quoted here, their accuracy not being guaranteed. The average annual rates of increase of the population, calculated by the excess of births over deaths, are as follows: Mothers of native birth and parentage, 19.5 per 1,000; foreign parentage, 36.5; colored, 17.8. In New England the native rate is 3.8 and the foreign 39.6. The census gives very meager information on the birth rate. About all the statistical summary possible is to deduct the number of deaths and the number of immigrants from the apparent increase of population. The total population of the United States in 1890 was 62,947,714, and the natural increase during the next ten years was 12,315,361. The average annual rate of excess of births for those ten years was 17.7 per 1,000 of population. The death rate was 16.3 per 1,000 in 1900 and about 8 per cent. per 1,000 in 1890, as given in the census reports of that year. Taking the mean of these, as representing the average annual death rate for the decade, there must have been an average annual birth rate of 35.1 per 1,000 to produce the increase of population. This rate is said to exceed the rates in some European countries. Their rates are given as follows: Hungary, 40.5; Austria, 37.2; Germany, 37.2; Italy, 35.5; England, 30.1; France, 22.2. Returning to the United States, a tabulated statement of the states is given. The lowest birth rate is among the native families of New England (3.8 per 1,000). In Connecticut it is the lowest of any state (1.8 per 1,000), while in Utah we find the highest percentage (63.1 per 1,000). The following table shows the excess of births over deaths per 1,000 of the population among native white parents:

Utah	63.1	Illinois	22.8
Idaho	48.3	Iowa	29.8
Wisconsin	41.2	Missouri	26.3
Minnesota	40.0	Nebraska	22.2
Texas	38.7	Kansas	21.6
North Dakota	35.3	Indiana	16.3
Louisiana	35.8	Michigan	19.3
West Virginia	33.9	Ohio	12.9
Arizona	36.8	Pennsylvania	14.0
Montana	32.2	New York	8.9

The following table shows the birth rate among the foreign-born population:

Utah	41.7	Illinois	43.9
Idaho	50.8	Iowa	31.0
Wisconsin	34.5	Missouri	17.1
Minnesota	53.4	Nebraska	43.7
Texas	53.2	Kansas	30.0
North Dakota	92.1	Indiana	19.4
Louisiana	11.2	Michigan	40.1
West Virginia	25.2	Ohio	21.9
Arizona	52.5	Pennsylvania	36.8
Montana	73.2	New York	36.6

There is an interesting table in the census reports showing that among the foreign population of the United States the

fecundity of the different races of mothers during the ten years from 1890 to 1900 was in the following order: Bohemian, Russian, Hungarian, Italian, Scotch, Scandinavian, Canadian, English, German, French, Irish. The officials of the census office believe that the true birth rate of the country was probably much higher than 35.1 per 1,000. As near as they can calculate, it should be about 10 per cent. higher.

CANADA.

Dominion Board of Health Wanted.—Drs. Roddick and Lachapelle of Montreal and Dr. R. W. Powell of Ottawa had an interview last week with the premier with regard to the establishment of a Dominion board of health to take charge of all matters affecting public health.

Trinity Consolidation.—Arrangements are now being completed whereby Trinity Medical College will become the Medical Department of Trinity University. For some months a committee has been at work. It is understood that a very fine site has been secured adjoining the present medical college building, on which new and modern buildings, to cost perhaps \$200,000, will be erected.

Richardson Testimonial.—It is the intention of the old students of Dr. J. H. Richardson, Toronto, to tender him a banquet in April, and to present him a portrait of himself in oil. Dr. Richardson, who was born in 1823, was appointed professor of anatomy in the University of Toronto in 1850. Three years ago he gave up active teaching and was appointed emeritus professor. He is still surgeon to the Toronto jail.

For Fifty Years a Medical Teacher.—This is the record of Dr. Uzziel Ogden of Toronto, who recently retired from the chair of gynecology in the University of Toronto. He may now be given the emeritus professorship. Dr. Ogden commenced practice in 1849 and commenced lecturing in medicine in 1853. He was the first editor of the *Canadian Practitioner and Review* when that journal was established in 1876 as the *Canadian Journal of Medical Science*.

McGill University Union's Building.—The graduates of McGill University have decided to mark the seventy-fifth anniversary of the commencement of lectures by the formation of a students' union and the erection of a building to be used by the union as a home. The anniversary will occur next year; and it has been decided that the building should cost \$75,000 of which \$10,000 has already been subscribed. This amount has been promised by two members of the McGill Graduates' Society, of New England. A canvass of the entire graduate body of McGill will be made to raise the balance. Dr. Craik, late dean of the medical faculty, was elected president.

Personal.—Dr. Gilbert Gordon, professor of hygiene in Trinity Medical College, Toronto, is recuperating at Old Point Comfort.—Dr. R. Barrington Nevitt, dean of the Woman's Medical College, Toronto, is paying a visit to his birthplace in Georgia.—Dr. Laphorn Smith, Montreal, will read a paper at the International Medical Congress at Madrid.—Dr. C. F. Martin, associate professor of medicine in McGill University, has been delegated by the Canadian Medical Association and the American Pediatric Society to the International Medical Congress at Madrid.—Dr. W. H. Drummond of Montreal was given a reception by the Canadian Society of Philadelphia February 27.

FOREIGN.

The Thirty-second German Congress of Surgery will be held at Berlin, June 3 to 6, 1903.

The German Society of Orthopedic Surgery will hold its second annual congress at Berlin, June 2.

Chodin Endowment.—The pupils and colleagues of Professor Chodin of Kiev recently endowed two free beds in the Eye Hospital in his name on the occasion of the thirtieth anniversary of his connection with the university.

Projected Sanatoria for the Poor in Belgium.—It is proposed to found a stock company in Belgium for the erection of inexpensive sanatoria for lung diseases. The prices will be not over 40 to 60 cents a day. The capital is only \$40,000, and aid is expected from the state.

Opening of Dispensary at Manila.—A free dispensary has been opened at Manila by a dozen American and Philippine physicians, Dr. Albert, president of the "Federal Party"; Dr. E. H. Winslow, surgeon to the constabulary, and Dr. H. W. Yemans, secretary; Drs. G. Ageo, P. H. Lyon, Lukban, Bautista, and others.

Charity Home for Physicians.—Dr. C. Rasch of Kropp bei Schleswig, Germany, is agitating the necessity of establishing

a home for physicians convalescing from diseases, and also for the superannuated, with, possibly, a view to including the members of physicians' families in its projected benefits. Our German exchanges endorse the necessity for such an institution "on account of the growing financial distress of our profession," and hope that the seed will fall on fruitful soil.

The Campaign Against Charlatans in Germany.—According to a regulation introduced last year, charlatans, before settling in a town, must report to the local medical authorities. The quacks now add to their advertisements: "Nature healer, duly reported to the local medical authority," *beim Kreisarzt Angemeldeter Heilkundiger*. This clause seems to express the official sanction of their practices, so that the regulation in question promotes quackery instead of combating it, as intended.

An American Professional Man's Club, composed in large part of physicians who are studying in Berlin, has been recently organized there, with headquarters at the Hotel Terminus. It is a source of much practical benefit to American physicians arriving in Berlin. Its objects are to promote social intercourse and the discussion of new and interesting professional matters and to afford information as to how and where to find the most practical professional work. Our correspondent says that this organization fills a long-felt want in Berlin, and that the club decided to notify the American medical profession through *THE JOURNAL*.

A Medical Woman of the Second Century.—Galen mentions a cataplasm "according to Antiochis," and Heracleides also refers to the same woman physician. An Austrian scientific exploring party found, in 1892, in the ruins of Tlos, a city in Asia Minor, the pedestal of a monument bearing the following inscription: "Antiochis, daughter of Diodotus of Tlos, honored by the senate and the people of Tlos for her experience in the medical art, has erected this statue to herself." No traces could be found of the statue. Baudouin establishes the identity of the person referred to in these three references, as a supplementary note to his work on "Woman in Medicine."

The Latest Charlatan Suit in Germany.—The charlatan Nardenkötter of Berlin, in a suit that has been dragging for two years, has been fined \$750 and condemned to three years' imprisonment on the principal count, and to \$150 fine and sixty days' imprisonment on another. The case was briefly mentioned in *THE JOURNAL*, Feb. 21, page 526. He had a regular physician in his employ, Dr. Kronheim, who signed the charlatan's prescriptions and received about \$40 a month for his work in this line, to which he devoted an hour a day. He was condemned to six months' imprisonment and "loss of honor for one year,"—*zu einem Jahre Ehrverlust*. The charlatan diagnosed and prescribed by mail, and the suit revealed practices among the druggists who put up his prescriptions which have led to a suit against one of them. The drugs prescribed were heroic remedies in many cases, and most exorbitant prices were charged. The details of the case have been fully written up in the lay papers and must have enlightened part of the public, at least, in regard to the dangers of quackery, although our German exchanges express little hope of this possibility. The *Allg. Med. Ct. Ztg.* of February 21 gives the particulars of the suit.

LONDON LETTER.

Lead Poisoning from "Plumbo-Solvent" Drinking Water.

A valuable and elaborate report on this subject by Dr. Houston has just been issued by the medical department of the local government board. As long ago as 1885 the attention of the department was directed to a considerable number of cases of lead poisoning in Sheffield which were believed to be due to the drinking water. Investigation showed that the water was acid in reaction, especially at its origin in the peaty moorlands, where it collected in depressions. This acidity was found to be due to the life processes of bacteria contained in the moist peat. The present report shows that the property of "plumbo-solvency" is generally destroyed when the water possessing it is mingled with a large volume of neutral or acid-neutralizing water derived from other sources. In other instances filtration through sand or neutralization with lime or whiting may be adopted. But local authorities are warned of the need of bearing in mind the risks incidental to using plumbo-solvent water. It is declared undesirable to rely wholly on any system of neutralization. It should be first ascertained whether acid water can be altogether rejected from the supply, as by eliminating special peaty areas or by providing "leaping weirs" which insure that the first washings from the peat after a period of drought are automatically cast aside. The

most satisfactory method of neutralization is sand filtration, with the addition of some neutralizing material to the filter and the subsequent addition of a trace of carbonate of soda to the neutral filtered water. But, whatever methods are adopted, they should be checked from time to time by suitable observations on the gathering areas, at the reservoirs and at the filters, as well as by examination of the water delivered to consumers.

Drunk or Dying?

The ever recurrent error of mistaking a serious injury or lesion of the brain for drunkenness has aroused the ire of London coroners and of the press against some of the great hospitals. Under the head of "A Grave Scandal" the *Hospital* insists on the necessity of providing a few emergency beds at each hospital, where this type of case could be kept under observation. Yet such are provided at only four out of the twelve great hospitals. A provincial coroner stopped the scandal of inquests coming before him of dying patients turned away from hospitals as drunk by declaring that in the next case he would commit the chairman of the committee and the superintendent of the hospital for manslaughter.

Non-Septic Puerperal Pyrexia.

At the Edinburgh Obstetrical Society Dr. Lamond Lackie read a very important paper on this subject. He pointed out that while most of the cases of fever in the puerperium are septic and in cases of doubt should be treated as such, yet septic organisms are not the only cause of fever. He related several cases. Dr. Lackie called attention to a very important practical point, which several of the cases illustrate: He has several times observed a rigor after administering an intrauterine douche, but always in cases in which the result showed that there was no retention of septic material. On the contrary, when the douche was needed the result was a fall of temperature.

Correspondence.

The Identity of Nerve Force and Electricity.

RICHMOND, Ind., March 7, 1903.

To the Editor:—My attention has been called to a paper read by Professor Loeb of the University of Chicago early in January, 1902. My reason for addressing you is this, viz.: to direct attention to work done, experiments made by myself, and conclusions reached, which will anticipate by priority his deductions and conclusions, as I understand them in his paper. I desire to mention my papers which have been read and published as early as 1873, 1875 and 1879, and papers since those dates which were published in the *Chicago Review* and are along the line recently indicated by Professor Loeb as "recent progress." I noticed the same, and desire to make my claim good, since 1873, in papers read and published. If, as he claims, the views are recent progress, I have anticipated him more than twenty years, as I was then teaching anatomy and physiology in the medical schools of Indianapolis. I only desire to mention the subject of each paper, as showing the subject and title.

First. My presidential address before the Indiana State Medical Society, May, 1873, subject "Vital Dynamics or What Is Force." 1. What Does It Represent? (Motion.) 2. What Are Its Relations and Correlations? 3. What are its Conservations?

Second. "Proofs of the Identity of Electrical Force and Nervous Force." A paper read at Indianapolis in 1879 before the Marion County Medical Society.

Third. Some papers on the relations of nervous force in the contraction and dilatation of blood vessels, also of heart dilatation and contraction, which were published in the *Chicago Medical Review*, copies of which are in my possession. (1884, September.)

A quotation is here made from this paper for the purpose of showing its basis: "The blood which is arterial, is the fluid which charges the battery, the brain, and hereby is generated force which is supplied to all tissues, and this charge, be it nervous or electrical, is a force which is universal in one form or another." The main question is, "What are the endowments and true relations of nervous tissue?" If we look at the re-

sults of mind and its power to impress other forces, we believe the evidence of our senses, and say that the directing forces in the entire universe were from mind, and this is the *primal* mind.

Now I have other papers which continue the thought of electricity and nervous force, and my last one is Jan. 1, 1902, with the title "Natural and Preternatural Law," in which are discussed "The Influence of Electricity and Mind in the Industrial and Economic Forces of the World."

These papers will establish my claim to priority on the questions at issue, and I desire now to only point to the proofs.

R. E. HAUGHTON, M.D.

Formerly Professor of Clinical and Operative Surgery in Central College of Physicians and Surgeons, Indianapolis.

Committee on Prophylaxis of Venereal Diseases.

New York, March 4, 1903.

To the Editor:—At the last (fifty-third) meeting of the American Medical Association, held at Saratoga Springs, June 10-13, 1902, a joint resolution from the Sections of Cutaneous Medicine and Surgery and Hygiene and Sanitary Science was introduced in the House of Delegates, as follows:

WHEREAS, There is a burning necessity to check the spread of venereal diseases, and, assuming that the States can not with impunity ignore the condition, it lies in the province of the medical profession to discuss and recommend to the respective state legislatures and municipalities means not regulative, but social, economic, educative and sanitary in their character, to diminish the danger from venereal diseases.

Resolved, That the Section on Cutaneous Medicine and Surgery of the American Medical Association invite the Section on Hygiene and Sanitary Science to co-operate with the Section on Cutaneous Medicine and Surgery in bringing about a propaganda in the different states, looking toward a proper recognition of the dangers from venereal diseases, and to arrange for a national meeting under the auspices of the American Medical Association for the prophylaxis of venereal diseases, similar to the International Conference for the Prophylaxis of Venereal Diseases, which meets again this year at Brussels, under the authority of the Belgian Government.

This was later submitted to the House of Delegates, which endorsed the action of the section and adopted the following:

Resolved, That a joint committee of six from the Sections on Hygiene and Sanitary Science and Cutaneous Medicine and Surgery be appointed by the President to stimulate study in and uniform knowledge of the subject of the prophylaxis of venereal diseases and to present to the American Medical Association a plan for a national meeting, similar to the International Conference for the Prophylaxis of Venereal Diseases, which meets again this year in Brussels, under the auspices of the Government of Belgium.

The Committee on Prophylaxis of Venereal Diseases consists of Drs. Henry D. Holton, chairman, Brattleboro, Vt.; Ludwig Weiss, secretary, 77 East 91st Street, New York; George M. Kober, 1600 T Street, Washington, D. C.; W. H. Sanders, Montgomery, Ala.; L. Duncan Bulkley, 531 Madison Avenue, New York City; and Frank H. Montgomery, 100 State Street, Chicago.

The peculiar social, racial and political conditions of our country are so different from those on the continent that they necessitate an expression of solely American ideas on this mooted question, both from a socio-economic and sanitary point of view. The committee desires the support of the medical profession and the aid and powerful collaboration of the medical press of the country to help them in this work. It takes the liberty of soliciting expressions and views editorially and otherwise, and would be glad of personal correspondence from those supporting the movement and who will contribute by papers, etc., to make it a success in case the House of Delegates should favor the holding of such a congress.

LUDWIG WEISS, M.D., Secretary of Committee.

The Chicago Water Supply.

CHICAGO, March 6, 1903.

To the Editor:—In the Bulletin of the health department for February, 1903, there is a comment on my paper "The Fly as a Carrier of Typhoid," published in THE JOURNAL, which seems to require an answer.

The Bulletin quotes my statement that the value of daily reports issued by the board of health as to the condition of the water "becomes somewhat problematical when one considers that twenty-four hours must always elapse between the collecting of the water and the published report, so that the people

who read on Tuesday morning that the water at a certain station is bad and take precautions accordingly are a full day late, for they were drinking the bad water on Monday." It then proceeds to explain that the water samples are collected at the pumping stations between 8 and 9 o'clock each morning, and that the results of the analyses are given to the press before noon and appear in the afternoon papers of the same day, and that, as the pumping stations are several miles out, the water does not reach the city until several hours after the character has been announced.

I must explain the seeming inaccuracy of my statement by saying that it was based on a sentence in Dr. Reynolds' paper in the *Medical Recorder*, 1902, vol. 23. "By 'good' in the laboratory characterization is meant a water free from pathogenic organisms, the colon group." If, as would appear from this statement, the water is examined bacteriologically, eighteen hours at least would be required, but from the statement in the Bulletin it is evident that the examination is only chemical, not bacteriologic.

Even if it were true, however, that a chemical examination is sufficient, that would not alter my contention that the daily bulletins as to the state of the water are misleading. Water which changes its character with every change of wind and current and with every heavy rainfall is always dangerous. The sample examined on any particular morning represents a small portion of water for a very limited period of time. On Monday morning, for instance, the water "is good," on Tuesday morning "bad." At what time did the change take place? And is it not possible that on Monday morning also a part of the water was "bad," although not the particular portion taken for analysis?

The daily examination of the water may be valuable from the point of view of the statistician and the sanitary engineer, but the publication of the results as "warnings" to the people simply serves to lull them into a false security.

ALICE HAMILTON.

Silkworm Gut, Not Silk, for the Sustaining Sutures in Fixation of the Kidney.

NEW YORK, March 7, 1903.

To the Editor:—In THE JOURNAL of March 7, page 665, in the report of the proceedings of the New York County Medical Association it is incorrectly stated that I prefer silk for suturing the kidney. I employ temporary sutures of silkworm gut which are brought out through all the structures of the back and tied over a fold of gauze.

AUGUSTIN H. GOELET, M.D.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

MEDICAL PRACTICE IN TEXAS AND AFRICA.

AGRICULTURAL COLLEGE, MISS., March 5, 1903.

To the Editor:—Please let me know what the requirements are for the practice of medicine in Texas.

W. H. B.

Ans.—Examination is required in Texas, but the certificates of twenty states, including Mississippi, are recognized by the state board in lieu of examination. A list of these states was given in this column last week.

NASHVILLE, TENN., February, 1903.

To the Editor:—Kindly inform me through your valuable columns of the requirements for practice in Orange River Colony and Transvaal, South Africa.

G.

Ans.—We have no copy of the laws of the Transvaal under the new government and have not learned that a medical council has been organized. A proclamation was made last year requiring license from the secretary of the Transvaal administration, presentation of diploma and proper identification. The applicant must be legally qualified in his own country, which must grant equal privileges to qualified British subjects. We do not know if any changes have been made since.

MADSTONES.

DUNKIRK, IND., March 9, 1903

To the Editor:—We have through the Ohio valley what are known as madstones. They are small stones, usually found among the collections of some relic hunters and have a real or fabled history of having been a cure all for poisoned wounds, snake bites, dog bites, etc.

J. R. GARNER.

Ans.—There is no scientific evidence that they have any effect other than a moral one

State Boards of Registration.

The New South Dakota Law.

A law just enacted in South Dakota regulating medical practice provides for a board of seven members appointed by the governor, not more than four from the regular school, two from the homeopathic and one from the eclectic. The board is to hold two regular meetings, beginning on the second Wednesday of July and the second Wednesday of January each year and such additional meetings and at such times and places as the board may deem advisable. Applicants must give satisfactory proof of being at least 21 years of age and of good moral character, and must pass an examination on the following subjects:

Anatomy, physiology, chemistry, pathology, therapeutics, practice of medicine, surgery, obstetrics, gynecology, diseases of the eye and ear, bacteriology, medical jurisprudence and such other branches as the board may deem advisable, and in addition thereto shall present evidence of having attended four full courses of lectures of at least twenty six weeks each in a legally organized and reputable medical college recognized by the board of medical examiners, no two courses being in the same year and of having received a diploma from a legally organized and reputable medical college which shall be in good standing as shall be determined by the board, and said diploma must be submitted to the board for inspection and verification; provided, that the four courses of lectures of six months each shall not apply to applicants who graduated prior to 1898

The applicant, before being permitted to take the examination, shall pay the secretary of the board an examination fee of \$20; the examination shall be written, oral or both, as the board may determine; the questions on all subjects except therapeutics and practice of medicine shall be such as may be answered alike by all schools of medicine. The applicant shall, if possible be examined in therapeutics and practice of medicine by those members of the board belonging to the same school as the applicant, and a license and certificate shall not be refused any applicant because of his adherence to any particular school of medicine. An average of at least 75 per cent. of correct answers is required. Any applicant who fails to pass the examination shall be eligible to a second examination at the next meeting of the board or at such time as the board may designate without an additional examination fee.

License can only be granted by the consent of not less than five members of the board and shall be signed by the president and secretary and attested by the seal of the board. All examination papers, together with the lists of questions answered shall be kept for reference and inspection for a period of not less than three years.

The law contains a reciprocity clause as follows:

The said board may, in its discretion, accept and license on the payment of the license fee and without examination of the applicant, any license which shall have been issued to him by the medical examining board of the District of Columbia, or any state or territory of the United States; provided, however, that the legal requirements of such examining board shall have been at the time of issuing such certificate or license in no degree or particular less than those of the state of South Dakota at the time when such certificate or license shall be presented for registration to the board created by this act; and provided further, that the provisions of this section contained shall be held to apply only to such of said medical examining boards as accept and register the certificate or license granted by this board without examination by them, of the persons holding such certificates or license. Each applicant on making application under the provisions of this section shall pay to the secretary of the board a license fee of \$20

The board shall have the power and authority to revoke any license of any physician or surgeon heretofore or hereafter granted or issued, on complaint made to it on oath by one responsible person if it shall satisfactorily appear to the board: 1, that such physician or surgeon has been guilty of unprofessional, immoral or dishonorable conduct; or 2, that such physician or surgeon has been convicted of a felony; or 3, if such physician or surgeon publicly professes to cure or treat disease, injury or deformity in such a manner as to deceive the public; 4, if he shows gross unprofessional incompetency, provided that such license shall not be revoked except after a hearing before the board of medical examiners at which at least five members of such board shall be present and of which hearing the person

holding the license to be revoked shall have had not less than ten days' written notice of the time and place of said hearing and only on due proof of the facts stated in the complaint.

The words unprofessional or dishonorable conduct as used in Sections 11 and 12 of this act are declared to mean:

1. Procuring or aiding or abetting a criminal abortion.
2. The employing of what is known as cappers or steerers
3. The obtaining of any fee on the assurance that a manifestly incurable disease can be permanently cured.
4. Willfully betraying a professional secret.
5. All advertising of medical business in which untruthful or improbable statements are made or which are calculated to mislead or deceive the public.
6. All advertising of any medicine or any means whereby the monthly periods of women can be regulated or the menses re-established if suppressed.
7. Conviction of any offense involving moral turpitude.
8. Habitual intemperance.

Appeal to the Circuit Court can be made in case of revocation or refusal to grant certificate. Itinerant physicians are charged a license of \$500 annually.

Licenses must be recorded in the office of the register of deeds in the county where the holder resides and practices. The register of deeds shall in July and January of each year furnish the secretary of the board of examiners a list of all licenses so recorded.

The definition of the practice of medicine is given in the following:

Section 21. When a person shall append or prefix the letters "M.B." or "M.D." or the title "Dr." or "Doctor," or any other sign or appellation in a medical sense to his or her name or shall profess publicly to be a physician or surgeon, or who shall recommend, prescribe or direct for the use of any person any drug, medicine, apparatus or other agency for the cure, relief or palliation of any ailment or disease of the mind or body, or for the cure or relief of any wound, fracture or bodily injury or deformity, after having received or with the intent of receiving therefor, either directly or indirectly any bonus, gift or compensation, shall be regarded as practicing within the meaning of this act.

This act shall not apply to the commissioned surgeons of the United States Army, Navy or ^{in actual} performance of their duties, nor ^{physicians or} surgeons from outside this state with physicians of this state nor to dentists or osteopaths in the legitimate practice of their profession nor to christian scientists as such, who do not practice medicine, surgery or obstetrics by the use of any material remedies or agencies, nor to resident physicians and surgeons of this state regularly licensed and practicing in this state at the time of the taking effect of this act; provided, however, that the license heretofore or hereafter granted to any physician or surgeon may be revoked for the same reason and in the same manner as stated and provided in Sections 12 and 13 hereof.

Penalties are provided for impersonation or violation of the law, and it is made the duty of the state's attorney to prosecute. The law has an emergency clause which makes it in effect immediately on its passage.

Proposed New Jersey Law.

The State Board of Medical Examiners of New Jersey has introduced a bill into the legislature requiring applicants for a state license to submit certified evidence of an academic education embracing a certificate or diploma issued after four years of study either in a normal, manual training or high school of the first grade in that state, or in a legally constituted academy, seminary or institute of equal grade, or a student's certificate of examination for admission to the freshman class of a reputable literary college, or an academic education considered and accepted by the state superintendent of public instruction as fully equivalent.

The medical requirements are four full school years of at least nine months each, including four satisfactory courses of lectures of at least seven months each, in four different calendar years prior to graduation from a legally incorporated medical college in good standing.

Provision is also made for graduates in practice prior to 1894, by accepting ten years of continuous and reputable practice as the equivalent of two courses of medical lectures, and for graduates in practice prior to 1903, by accepting five years as the equivalent of one course of lectures, provided that such substitution or exemption be specified in the license.

Book Notices.

BIOGRAPHIC CLINICS. The Origin of the Ill Health of De Quincey, Carlyle, Darwin, Huxley and Browning. By George M. Gould, M.D., Editor of *American Medicine*. Cloth Pp. 223 Price, \$1.00. Philadelphia: P. Blakiston's Son & Co. 1903

Whatever the accomplished editor of *American Medicine* may write is sure to be interesting. His writings have a positive, aggressive note about them that is refreshing and invigorating.

These characteristics and his versatility are well shown in this latest work, a study from the borderland between pure literature and medicine.

Dr. Gould takes five great Englishmen, De Quincey, Carlyle, Darwin, Huxley and Browning, each of whom it will be remembered was a great physical sufferer, and makes a critical study of the afflictions. All this suffering Gould believes was due to eye-strain. This is the object of the book, to prove that unrecognized and untreated refractive errors with consequent eye-strain drove De Quincey to opium, made Jane Welsh's husband an inconsiderate, ill-tempered dyspeptic tyrant, deprived Darwin of the power of long continuance at study of books or with the microscope, and caused Huxley and Browning to groan with the tortures of unexplained and almost constant headache. Numerous quotations are given from the letters of these men or of their contemporaries bearing on their health, striving to show that whenever the eyes were used for near work complaints appear of headache, nervousness, sleeplessness, biliousness, indigestion, etc. When reading and writing are dropped, especially when open-air work or recreation is indulged in, i. e., when little strain for near accommodation is demanded of the eyes, the complaints of ill health cease.

Whatever may be our views concerning eye-strain as a cause of headache and other disorders of health, and however prejudiced we may be at first as to the relation of refractive errors to the ill health of these five men in particular, we can not read this really fascinating book without feeling that the author has advanced a strong chain of circumstantial evidence in favor of his view. Nor can we avoid agreeing with him that in the light of our present day knowledge it seems disgraceful that no physician appears to have made even crude tests of vision and surprising that such scientific men as Darwin and Huxley apparently never once have suspected that there might be ocular defects to explain their suffering.

It seems to us that the author weakens his cause by his last chapters on the topic of eye-strain as the cause of various reflex phenomena. His views seem extreme. If we understand his statement—about the only one that is at all involved or the least obscure (p. 154)—he believes that "at least 90 per cent." of such symptoms as "headache, dyspepsia, 'biliousness,' sick-headache, migraine, neurasthenia, anemia, vertigo, insomnia, anorexia, constipation, eructation of gas, languor, ill-temper, melancholia, etc., are not caused by dietary indiscretion or organic disease, and of these, over 90 per cent. are reflex ocular neuroses, i. e., due to eye-strain." "Most eye-strain is due to astigmatism."

To the physician in general practice this will seem a broad and incredible statement. Granting that there is truth in Dr. Gould's statements that Nature cares for the delicate and all-important eye by making the rest of the body the vicarious sufferer, granting that the modern physician in his eager study of infectious diseases neglects the non-infectious and functional diseases and that he pays too little attention to "the reflex" and overlooks especially the reflex symptoms due to the eye, granting that glasses are not prescribed as often as they should be because of popular prejudice, or because "the eyes do not hurt," granting that many oculists are careless and unscientific, that opticians are worse and that the "muscle-cutters" are faddists, granting all this, yet who of wide experience in practical medicine can believe that the one great cause of 80 or 90 per cent. of headaches and a very large proportion [80 per cent.] of "digestional" or "nutritional" diseases is to be sought in eye-strain, and that these headaches and "digestional" disorders together are direct or secondary sources of a large part of the functional diseases and misery of the world (p. 205). But if the general practitioner can not believe this what shall be said of the specialists other than the oculist? Where does the stomach come in? Must our old notions as to errors in diet being a fruitful cause of dyspeptic symptoms go? Farmers furnish some of the worst cases of digestional disease. And what about our hyperchlorhydria and the train of secretory disturbances? Will glasses correct 80 per cent. of these cases, and have all our cures by diet been mistakes? And then the gynecologist, what must be his feelings as he sees the general practitioner

after reading this book, steering the neurasthenic woman not to the office of the man who would cure her by stitching up a torn cervix, cutting a piece out of an ovary, breaking up adhesions, putting the displaced uterus where he thinks it ought to be, but across the hall to the oculist, who cures it all by glasses. And then the floating kidney reflex and Glénard's disease, and the hypertrophied turbinated bones and hemorrhoids, are they all delusions? And is there no such thing, then, as a true nerve-tire and brain-fatigue? Is this all due to the eye?

Surely our author has been extravagant in his statements or else we have misunderstood them. And we confess that his use of the word "functional" has been a little confusing to us at times. Astigmatism is not, we believe, the source of all these ills, nor is the wearing of glasses a panacea. Let the multitudes of those who have worn them, carefully fitted, for headache but with no help, bear witness. Let the thousands of sufferers from migraine, an excellent example of heredity, an influence at which our author rather casts slurs—testify who have tried glasses in vain.

The results of uncorrected astigmatism are undoubtedly often serious and should be attended to. This book does good in forcibly calling attention to this fact, and is, as we have said, a most interesting and delightful discussion of a borderland topic. But while admitting that the causal relation of eye-strain to the physical ills of these five men is made highly probable by the proof advanced, we can not accept the broad conclusions and extravagant statements that are scattered here and there throughout the book making the bulk of the medical profession little short of criminals in their supposed neglect of the eye as the cause of a large share of human suffering.

In spite of these criticisms, in spite of the overly-enthusiastic claims of the author, we heartily commend this book to every practitioner. Eye-strain is a cause of many troubles, there is no doubt of it, and every physician should be made to realize it.

A TEXT-BOOK OF MATERIA MEDICA, THERAPEUTICS, AND PHARMACOLOGY. By George F. Butler, Ph.G., M.D., Professor of Materia Medica and Therapeutics in the College of Physicians and Surgeons, Chicago, Medical Department of the University of Illinois, etc. Fourth Edition, Thoroughly Revised. Handsome Octavo Volume of 896 Pages, Illustrated. Cloth, \$4.00 net. Philadelphia and London: W. B. Saunders & Co. 1902.

In this fourth edition within the last six years the author has added to his valuable treatise considerable new and important matter, and it seems to be brought up to date as well as carefully revised. Some changes have been made in his expressions of opinion in regard to certain drugs and some of the newer ones that have not yet obtained pharmacopeial rank are included. The book seems likely to keep the good reputation that it has held in the past as one of the best recent text-books on materia medica and therapeutics.

THE MATTISON METHOD IN MORPHINISM. A Modern and Humane Treatment of the Morphin Disease. By J. B. Mattison, M.D., Medical Director, Brooklyn Home for Narcotic Inebriates. Cloth. Pp. 40. Price, \$1.00. Published by the Author. New York: E. B. Treat & Co. 1902.

This little volume gives the method and treatment of one who is certainly experienced in handling a difficult class of patients, the morphin habitués. The author's method is largely sedation with bromids supplemented by other measures, and the gradual discontinuance of the morphin habit, not so very long drawn out either, for the whole treatment does not seem to usually exceed four or five weeks at the outside. It seems to be a very satisfactory little monograph.

Deaths.

Charles F. Ulrich, M.D. University of Louisville, Ky., 1870, a member of the American Medical Association, surgeon of volunteers during the Civil War; some-time president of the Wheeling and Ohio County Medical Society and Medical Society of the State of West Virginia; vice-president of the American Congress of Tuberculosis and member of the American Academy of Medicine, died from paralysis at his home in Wheeling, W. Va., February 18, aged 75.

Franklin B. Galbraith, M.D. University of Michigan, Ann Arbor, 1861, a member of the American Medical Association, surgeon to the Fourth Michigan Volunteer Cavalry in the

Civil War, and thrice mayor of Pontiac, Mich., died at his home in that city, February 21, from angina pectoris, after an illness of only ten hours, aged 63. At a special meeting of the Pontiac Medical Society, February 23, resolutions of sorrow and sympathy were adopted.

Martin Rockwell Gage, M.D. Geneva (N. Y.) Medical College, 1852, who retired from practice in 1892, died from consumption at his home in Sparta, Wis., February 25, aged 78. He was a pioneer physician and surgeon of western Wisconsin, and served as surgeon of the Twenty-fifth Wisconsin Volunteer Infantry during the Civil War. He was a member of the Wisconsin State Medical Society and of the American Medical Association.

Willard I. H. Mathews, M.D. Iowa College of Physicians and Surgeons, 1886, county physician of Polk County, major and brigade surgeon U. S. V., in the Spanish-American War, for a time surgeon-in-charge of the U. S. General Hospital, Presidio, San Francisco, and for several months on duty in the Philippine Islands, died at his home in Des Moines, Iowa, February 24, from pneumonia, after an illness of four weeks, aged 38.

George E. McPherson, M.D. Jefferson Medical College, Philadelphia, 1855, died at his home in San Francisco, February 20, aged 73. He was a surgeon in the United States service in the Civil War, and then located in Chicago, but moved to California in 1872. In 1896 he fell from his carriage, fracturing his hip, and two years ago had another fall, from the effects of which he never recovered.

Lemuel G. Goode, M.D. New York University, 1887, died at his home in Jersey City, N. J., from pleuro pneumonia, February 24, after an illness of four days. Dr. Goode was one of the first medical men to be the subject of operation under spinal anesthesia. In December, 1901, his leg was amputated, and during the operation he made notes of his sensations.

John Gardine, M.D. Tulane University, New Orleans, 1861, a member of the American Medical Association; president Clark County Medical Society; ex-vice-president Georgia Medical Association, and one of the most prominent and beloved citizens of Athens, Ga., died at his home in that city, February 18, from pneumonia, after an illness of two days, aged 63.

James Calvin Hall, M.D. College of Physicians and Surgeons, Baltimore, 1879, died suddenly from heart disease, while attending a lecture in Millerstown, Pa., February 11, aged 48. At a meeting of the physicians of Perry, Juniata and Snyder counties, held February 16, memorial resolutions were adopted.

Pumphrey H. Hood, M.D. Jefferson Medical College, Philadelphia, 1851, for half a century a resident of Litchfield, Ill., died at his home in that place, February 20, aged 79. He was a surgeon in the United States service during the Civil War, and represented Montgomery County in the legislature in 1895.

Frank Brownlie Newton, M.D. University of Vermont, Burlington, 1899, died at his home in Stafford Springs, Conn., February 19, from pneumonia, after an illness of eleven days, aged 28. He was a member of the Connecticut Medical Society.

Richard Jordan Gatling, M.D. Medical College of Ohio, Cincinnati, for some time a practitioner of Indianapolis, but better known as the inventor of the Gatling gun, died suddenly in New York, February 26, from heart disease, aged 84.

George C. Gage, M.D. College of Physicians and Surgeons, New York, 1872, a specialist in diseases of the nose and throat, died at his home in New York City, February 22, three weeks after an operation for appendicitis, aged 52.

George White Sloan, M.D. Indiana Medical College, Indianapolis, president of the American Pharmaceutical Society, died at his home in Indianapolis, from apoplexy, February 15, after an illness of four months, aged 67.

Joseph A. Jackson, M.D. McGill University, Montreal, 1879, a member of the New Hampshire Medical Society, died at his home in Manchester, N. H., from la grippe, February 20, after an illness of two weeks, aged 68.

Henry McQuiston, M.D. Western Reserve University, Cleveland, 1868, died at his home in Pasadena, Cal., from consumption, February 13, after an illness of four years, aged 65.

Robert Hamilton Ramage, M.D. Homeopathic Hospital College, Cleveland, Ohio, 1872, Carnegie, Pa., died at a hospital in Pittsburg, from consumption, February 15, aged 61.

George Young, M.D., retired, of Pioneer, Ohio, died at St. Mary's Hospital, Detroit, February 15, from injuries received four days previously in a street-car accident, aged 64.

William T. Riddlemoser, M.D. College of Physicians and Surgeons, Baltimore, 1884, died at his home in Smithsburg, Md., February 18, from tubercular meningitis, after an illness of several weeks, aged 43.

John B. Liddell, M.D. Atlanta (Ga.) Medical College, 1880, died from pneumonia, February 22, at his home in Gadsden, Ala., after an illness of three days.

Cyrenius D. Spencer, M.D. Berkshire Medical College, Pittsfield, Mass., 1849, died from apoplexy at his home in Binghamton, N. Y., February 22, aged 77.

Edward H. Luckett, M.D. Kentucky School of Medicine, Louisville, 1854, died at his home in Owensboro, Ky., February 24, from heart disease, aged 70.

James I. Scollard, M.D. Albany (N. Y.) Medical College, 1874, died suddenly in his office in Clinton, N. Y., February 20, from heart disease, aged 75.

Ruel M. Rogers, M.D. University of Missouri, St. Louis, 1854, died at his home in Pleasant Grove, Utah, February 6, from pneumonia, aged 70.

Robert M. Means, M.D. Jefferson Medical College, Philadelphia, 1893, died at his home in De Haven, Pa., February 14, from pneumonia, aged 35.

David H. West, M.D. Eclectic Medical Institute, Cincinnati, 1874, was found dead in bed at his home in Calvert, Texas, January 12.

Association News.

NEW ENGLAND RATES TO NEW ORLEANS.

The New England Passenger Association has authorized the rate of a fare and a third to the eastern gateways of the Trunk Line Association. The rate from these points to Washington or western termini (such as Cincinnati) is the usual reduced rate for regular season excursion and approximates a fare and a third. The rest of the way to New Orleans the rate is one fare for the round trip. All these rates and regulations will be given in the New Orleans number of THE JOURNAL, April 11.

THE NEW ORLEANS PROSPECT.

A Quotation from the Memphis Medical Monthly Concerning the Annual Meeting.

"All physicians who contemplate being present—and what Southern medical man will not attempt to get there?—will be looking forward to this occasion with keen anticipation, and will be planning that nothing shall interfere with their arrangements to be in New Orleans for at least the four days of the meeting.

"New Orleans is always a pleasant city to visit, and conditions for pleasure and profit will be exceedingly propitious at this time. The medical profession of New Orleans are going to do everything conceivable to render this meeting the largest and most enjoyable that the Association has ever held, and the arrangements that they have practically consummated for the accommodation and entertainment of visiting physicians are noteworthy for their completeness. The business and scientific sessions of the Association and its various sections will be interspersed with a number of entertainments which promise to be most delightful, and the visitor from the North will have every opportunity to judge of the quality of the vaunted Southern hospitality, while the Southerner will be completely overwhelmed by the prodigality of this hospitality as lavished in New Orleans."

INDIANA'S PROSPECTS FOR NEW ORLEANS.

An Extract from an Advance Copy of the Indiana Medical Journal for March.

"New Orleans presents notable features. To the ordinary tourist the yearly carnival and the French opera are signal attractions. There are other matters of local color: The French market, the great river explored by LaSalle and its picturesque levees, the French and Spanish creole quarters, and the gastronomic privileges which rival those of Baltimore—the paradise of good things to eat of all the world.

"The Crescent City is the second in exports and twelfth in population. The invention of the cotton gin by Whitney and the successful granulation of sugar by deBore one hundred years ago, gave a vast impetus to the state and city, which was further increased by the Louisiana purchase in 1803. Five miles below the city is the battlefield of Chalmette, where, Jan. 8, 1815, after the treaty of peace had been signed, Jackson repulsed the 5,000 British regulars fresh from the Napoleonic battlefields, with a disparity of losses not excelled in history.

"The city has a tropical climate; the great magnolia, the palm, the banana, the fig, the orange tree are in evidence. Between the lake and the river the atmosphere is moist and equalized in temperature, the lowest 27 F. and the highest 94. In May the city is in its greatest beauty, and the health conditions the best of the year. For a spring vacation for the physician and his family the time and place is ideal, and we make bold to say that not less than 200 members of the Indiana profession and their families will take advantage of this opportunity to visit or to revisit the city of carnivals, creoles, market baskets, tropical vegetation and quaint people."

Medical Organization.

The Duty of the Hour.

That the enthusiasm in favor of organization is growing rapidly must be evident to all who come in contact with medical men in every section of the country. Of course there are scoffers and doubting Thomases, but all respectable members of the profession are heartily tired of the antagonistic spirit which has so influenced our personal, professional and educational affairs in the past. This spirit has so lowered us in our own and in the public estimation that many had come to believe it inseparable from our calling, but the profession as a whole is ready to give reasonable trial to any plan which promises even a hope of relief.

How to take this widespread sentiment at the tide and crystalize it into a permanent reform is the problem and duty of the hour. This is being admirably done in a few states, and in many counties in other states, and should be at once undertaken by the officials and members of existing societies everywhere. The magnitude of the work will be understood when it is authoritatively stated that there are over 70,000 licensed practitioners in this country who are not members of any kind of society, county, district, state or national.

In an experience extending into many states, and where nearly every possible condition was to be met, it has been found that the physicians of nearly any county would promptly respond to a kind and plainly expressed invitation from any recognized outside authority to meet and organize. If the preliminary discussion was frank as to existing evils, to the difficulties of maintaining local societies, and the certain reward, scientific, social and material, which would follow success, such organizations were easily made permanent. Some counties in several states are already reporting every physician within their boundaries as already members of the county and state society and of the American Medical Association.

Such results as these have not come spontaneously or by accident, but from the patient, systematic and self-sacrificing labors of some zealous member of the Association. With similar effort they are possible in all but a few sparsely settled counties of the Union. Officers of state societies and members of the Association everywhere are earnestly requested to consider the possibilities to the profession from such missionary work, and to feel free to apply to the organization department for literature and any other assistance at its command.

Southwestern Minnesota District and County Medical Society.

At its meeting, January 29, in Worthington, the organization of this society was perfected in accordance with the rules of the American Medical Association. Dr. Emil King, Fulda, was elected president and Dr. Herbert D. Jencks, Pipestone, secretary.

Hardin County (Ky.) Medical Society.

At the regular meeting, held at Elizabethtown, March 5, Dr. C. Z. Aud was elected president; Dr. James W. O'Conner, vice-president, and Dr. James C. Mobley, secretary and treasurer. The society adopted the constitution and by-laws prepared by the committee on organization of the American Medical Association.

Monroe County (N. Y.) Medical Association.

The members of the Fourth District branch of the New York State Medical Association, residing in Monroe County, met in Rochester, February 27, and organized this association by the election of the following officers: President, Dr. Thomas A. O'Hare; vice-president, Dr. Edward Mott Moore, and secretary and treasurer, Dr. James C. Davis, all of Rochester.

Societies.

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, FIFTY-FOURTH ANNUAL MEETING, NEW ORLEANS, MAY 3-8.

Medical Society of the Missouri Valley, Council Bluffs, Iowa, March 19-20.

Florida Medical Association, St. Augustine, April 8.

Western Ophthalmological and Oto-Laryngological Association, Indianapolis, April 9-11.

Tennessee State Medical Society, Nashville, April 14-16.

Medical Association of Georgia, Columbus, April 15.

South Carolina Medical Association, Sumter, April 15-16.

Iowa State Medical Society, Sioux City, April 15-17.

Medical Association of the State of Alabama, Talladega, April 21.

Medical Society of the State of California, Santa Barbara, April 21.

Mississippi State Medical Association, Greenville, April 21-23.

Medical Association of the State of Missouri, Excelsior Springs, April 21-23.

Texas State Medical Association, San Antonio, April 28.

Louisiana State Medical Society, New Orleans, April 28-30.

Medical and Chirurgical Faculty of Maryland, Baltimore, April 28-30.

Nebraska State Medical Society, Lincoln, April 28-30.

Illinois State Medical Society, Chicago, April 29-May 2.

Arkansas Medical Society, Jonesboro, April 30-May 2.

New York Academy of Medicine.—Dr. Lewis A. Conner has been elected chairman, and Dr. Ernest E. Smith, secretary, of the section on Medicine.

Redlands (Cal.) Medical Society.—At the annual meeting, January 21, Dr. Thomas M. Blythe was elected president; Dr. Christopher A. Sanborn, vice-president, and Dr. C. E. Ide, secretary and treasurer.

Red River Valley (Minn.) District and County Medical Society.—The first quarterly meeting was held at Crookston, January 27. Dr. Charles E. Dampier, Crookston, presided, and a banquet was tendered the society by Dr. George A. Morley.

St. Joseph (Mo.) Academy of Medicine.—Local physicians organized under this name, January 17, and elected Dr. James W. Heddens president; Dr. John B. Reynolds, vice-president, and Dr. William L. Kenney, secretary and treasurer.

Orange County (N. Y.) Medical Association.—The annual meeting was held in Middletown, January 21. Dr. Willis I. Purdy was elected president; Dr. William E. Douglas, vice-president, and Dr. Charles I. Redfield, secretary and treasurer, all of Middletown.

Rockland County (N. Y.) Medical Association.—At the annual meeting, held in Nyack, January 21, Dr. D. Burr Van Wagenen, Suffern, was elected president; Dr. George A. Leitner, Piermont, vice-president, and Dr. Norman B. Bayley, Haverstraw, secretary and treasurer.

Stark County (Ohio) Medical Society.—The annual meeting was held in Canton, January 17, when Dr. William C. Steele, New Berlin, was elected president; Dr. Frank W. Gavin, Canton, secretary and treasurer, and Dr. Frank E. Hart, Canton, corresponding secretary.

Quarter-Century Medical Club, Detroit.—The sixth annual banquet was held January 29. Dr. Henry A. Cleland was master of ceremonies; Drs. Justin E. Emerson and Albert E. Carrier were toastmasters, and Drs. Ernest L. Shurly, Leartus Connor and Justin E. Emerson were in charge of the arrangements.

Teller County District (Colo.) Medical Association.—The annual election, held recently, resulted as follows: Dr.

Marion A. Lattimer, Victor, president; Drs. William E. Driscoll, Goldfield, John A. Dunwoody, Cripple Creek, and J. S. Manley, Cripple Creek, vice-presidents; Dr. W. W. King, Cripple Creek, secretary, and Dr. John B. Polly, Elkton, treasurer.

Lavaca County Texas Medical Association.—The physicians of Lavaca County met, February 23, at Hallettsville, and organized a county association, electing the following officers: Dr. Walter Shropshire, Yoakum, president; Dr. James E. Lay, Hallettsville, vice-president; Dr. William E. Drisdale, Yoakum, secretary, and Dr. J. G. Guenther, Moulton, treasurer.

Richardson County (Neb.) Medical Society.—In accordance with the plan of the Nebraska State Medical Society, a county medical society was organized at Falls City, January 28, with the following officers: Dr. J. A. Waggener, Dawson, president; Dr. Anthony Keller, Falls City, vice-president, and Dr. Frank C. Wiser, Falls City, secretary and treasurer.

Southwestern Iowa Medical Association.—At the semi-annual meeting, held in Creston, February 19, the following officers were elected: President, Dr. J. E. Howe, Greenfield; vice-presidents, Drs. Charles H. DeWitt, Glenwood, and J. Frank Aldrich, Murray; secretary, Dr. Benjamin F. Gillmor, Creston, and treasurer, Dr. Joseph P. Claybaugh, Creston.

Hospital of the University of Pennsylvania Alumni Association.—On February 28 fifty former resident physicians of the hospital assembled at the University Club for their second annual banquet. Toasts were responded to by Drs. Barton Cooke Hirst, William E. Hughes, Charles H. Frazier, Edward Martin and John Carpenter. Dr. George E. de Schweinitz was elected president.

Ramsey County (Minn.) Medical Society.—At the annual meeting in St. Paul, January 26, Dr. Angus MacDonald was elected president; Dr. H. Longstreet, vice-president; Dr. Ethelbert F. Geer, secretary; Dr. Frederick Leavitt, treasurer, and Dr. Alvah F. Whitman, necrologist. The constitution and by-laws were so amended as to permit any legal practitioner of non-sectarian medicine to become a member.

St. Clair County (Mich.) Medical Society.—The Port Huron Academy of Medicine changed its name to the St. Clair County Medical Society at its meeting, January 20, in order to become an integral part of the Michigan State Medical Society. Dr. Charles C. Clancy, Port Huron, was elected president; Dr. W. P. Derck, Marysville, vice-president, and Dr. A. Henri Cote, Port Huron, secretary and treasurer.

Sullivan County (N. H.) Medical and Surgical Society.—Physicians of Sullivan County met at Newport, January 28, and organized a county society to be in affiliation with the New Hampshire State Medical Society. Dr. Henry L. Stickney, Newport, was elected president; Dr. David P. Goodhue, West Springfield, vice-president; Dr. Fred P. Claggett, Newport, secretary, and Dr. Howard A. Hannaford, Grantham, treasurer.

Tuscola County (Mich.) Medical Society.—The physicians of the county met at Caro, January 19, and organized this society in conformity with the requirements of the American Medical Association and the Michigan State Medical Society. The following officers were elected: Dr. Arthur L. Seeley, Mayville, president; Dr. John E. Handy, Watrousville, vice-president; Dr. Wynne C. Garvin, Millington, secretary, and Dr. Frank D. La Valley, Vassar, treasurer.

Olmsted County (Minn.) Medical Society.—At the annual meeting, January 21, in Rochester, the following officers were elected: Dr. Arthur F. Kilbourne, Rochester, president; Drs. Charles L. Chapple, Rochester, and Charles E. Fawcett, Stewartville, vice-presidents, and Dr. Hugo Speier, Rochester, secretary and treasurer. The reorganization under the rules of the State Medical Society was voted, and a committee appointed to revise the constitution in conformity therewith.

Upper Mississippi Medical Association.—At a meeting in Brainerd, January 19, the physicians of that section of the state perfected an organization to be affiliated with the Minnesota State Medical Society, embracing the counties of Morrison, Crow Wing, Aitkin, Cass, Beltrami, Wadena and Hubbard. The following officers were elected: Dr. Walter Courtney, Brainerd, president; Dr. John J. McKinnon, Wadena, vice-president; Dr. John A. Thabes, Brainerd, secretary, and Dr. J. G. Millsbaugh, Little Falls, treasurer.

Boston City Hospital Alumni Association.—The annual meeting was held recently. For the first time the associate members, who include past and present members of the visiting staff, were present. The club now numbers nearly 300. Ninety more were voted in at this meeting. The officers for the

coming year are: President, Dr. Charles P. Bancroft, Concord, N. H.; vice-president, Dr. Chauncey C. Sheldon, Lynn, Mass.; secretary, Dr. William H. Robey, Jr., Boston, Mass., and treasurer, Dr. William H. Prescott, Boston, Mass.

Union Medical Association of Northeastern Ohio.—The one hundred and twenty-sixth quarterly meeting was held in Akron, February 10. The membership of the association is 140, distributed over the 15 northeastern counties of the state. The following officers were elected: President, Dr. Charles E. Norris, Akron; vice-presidents, Drs. Edward Lauder, Cleveland, and Frank C. Reed, Akron; secretary, Dr. John H. Seiler, Akron; corresponding secretary, Dr. Charles W. Milliken, Akron, and treasurer, Dr. Harold H. Jacobs, Akron.

THE PHYSICIANS' CLUB OF CHICAGO.

Regular Meeting, held Feb. 23, 1903.

Dr. Henry B. Favill in the Chair.

The general subject was "The Prevention of Tuberculosis."

The Reasons for a Special Effort to Prevent the Spread of Tuberculosis.

Dr. WILLIAM A. EVANS was the first speaker, and gave the following reasons for prophylactic effort: First, the subject is worthy of consideration by this or any other body; second, there is no special reason for efforts at prevention unless there is some hope that that effort can be made successful; third, there is reason for special effort, in view of the fact that it will not prove unavailing.

Discussing the first of these reasons, he said that tuberculosis still remains the chief source of death, and the subject of prime consideration. In the ten principal cities of this country tuberculosis is responsible for 18,763 deaths, or 10.8 per cent. of the total death rate each year. Compared with other infectious diseases, which receive greater attention in the matter of prevention than tuberculosis, the relation in Chicago to diphtheria is 4 to 1; scarlet fever, 7 to 1; typhoid fever, 7 to 1. Kohler's statistics show that between the ages of 15 and 60, one-third of the people die from tuberculosis. According to Biggs and Prudden, there are in the City of New York at any given moment twenty thousand people who are rendered unproductive by reason of this disease.

Can tuberculosis be cured? According to the statistics compiled by Dr. Appel, U. S. A., in charge of Ford Bayard Sanitarium, 7.4 per cent. of cases are clinically cured, 11.6 convalescent, 34.9 improved, 25.2 unimproved, and 20.9 per cent. die. Dr. Evans quoted the statistics of other writers.

The question of prevention of tuberculosis resolves itself into hygiene, general hygiene and ventilation. Prevention must be effected, not only by the medical profession, but by the laity, who are most directly concerned and largely responsible for the spread of this disease. Laws are the result of public action; public action is slower than public conscience, and public conscience lags far behind public intelligence.

In What Way Can the General Practitioner Assist in the Purposes of the Crusade?

Dr. N. S. DAVIS, JR., said that the position of the general practitioner in this movement is educative, but his influence should not be limited to educating patients only. It is essential to educate those who must be associated with them. Patients should live in light rooms, where there is good ventilation, and where the surroundings are clean and hygienic.

There is also a need for places where patients can be educated to care for themselves; where they can be taught by object lessons, seeing others who have improved under proper hygienic surroundings. To-day there is scarcely a hospital in Chicago which is willing to take these cases, because they are not prepared for them.

There is another advantage to be gained by admitting tuberculous patients to general hospitals. Every trained nurse should have experience in the care of cases of pulmonary tuberculosis.

The Committee on the Prevention of Tuberculosis of the Visiting Nurses' Association, Chicago.

Dr. ARNOLD C. KLEBS read a paper with this title. The outline of the work as approved by the committee is as follows:

In general, considering the fact that the family members of a consumptive and those living in unhealthy conditions are the ones most threatened by the disease, education on the subject and eventually proper material aid have to be furnished to them primarily. The distribution of instructive pamphlets alone usually proves insufficient. It is, therefore, necessary to enhance the value of such printed instructions by personal interviews and repeated visits. For this purpose the co-operation of specially trained physicians and nurses, with the assistance of charity organizations, is deemed of importance. To facilitate such co-operation and to insure the uniformity of the measures to be employed, it is planned to establish a central office. From this office the general work is to be directed and carried out in district offices in the different parts of the city.

The work in the central office (1) is to be done by an executive committee of six, to be elected from (2) the general committee of forty, of which twelve are to be physicians. (3) A special tuberculosis fund may be established, if necessary. (4) Work to be done in the central office.

1. To collect and file all information. To ascertain the causes for the greater prevalence of the disease in certain districts. To examine the conditions of life in those districts, especially the condition of dwellings. To start a collection of literature on tuberculosis, especially in its socio-economic aspect. To maintain correspondence with other organizations.

2. To prepare instructive reading matter for distribution among (1) the public, (2) nurses, and (3) physicians.

3. To make arrangements for public lectures.

4. To co-operate with health authorities.

5. To disinfect houses.

6. To procure information about healthful occupations, eventually furnishing positions.

7. To decide on the advisability of transferring persons to other climates, eventually providing them with positions abroad.

8. To plan, found and eventually maintain health farms.

9. To advance the introduction of modern methods in existing institutions.

10. To test new ideas which promise results.

11. To supply the needy with food, medicines, disinfectants, spit cups, etc.

12. To extend aid to all efforts at organization.

13. To examine all cases applying for help and treatment.

14. To found district offices, each to have physicians and nurses in charge.

The essayist stated that as long as sanatoria can not be had, sanatorium methods must be used in the houses of the consumptives. To make the movement successful, every physician and layman ought to learn about it and help it in every possible way.

Discussion.

DR. ROBERT H. BABCOCK said that whenever tuberculosis has been diminished, it has been through the intelligent efforts of the medical profession. The first step in this educational movement should be the education of the medical profession. Many physicians are entirely oblivious to the necessity of preserving proper hygienic measures.

DR. WALTER M. FITCH called attention to the fact that a well-developed active chest is not so susceptible to infection, and much can be done to overcome this susceptibility to the disease.

DR. GEORGE W. WEBSTER emphasized the importance of institutional treatment; each patient, when he returns home, becomes an educated center, from which accurate information is disseminated. In the schools and universities more time should be devoted to the teaching of public hygiene, and less time to music and other studies of less value. Dr. Webster offered the following resolution, which was adopted:

Resolved, That it is the sense of the Physicians' Club that its members heartily approve and endorse the plan proposed by Dr. Klebs for preventing the spread of pulmonary tuberculosis.

DR. L. HARRISON METTLER suggested that properly guarded articles be given to the public press. The public can be reached better through the daily paper than through any other medium.

DR. A. M. CORWIN referred to the poor architecture, from the standpoint of hygiene, of the modern building, saying that the atmosphere in most of them is foul, because of insufficient ventilation and poor lighting facilities.

DR. ARNOLD C. KLEBS believes that the public would resent any intrusion by public officers in a disease which affects the victims rather slightly. He thinks a private movement would be more successful than one instituted by legislation. The poor people appeal for physicians, for nurses, and to charity organizations, and through these channels they can be instructed and educated.

DR. JOHN A. ROBISON said much can be done if pressure is brought to bear on the city officials, so that they will give the local board of health more power to carry out proper sanitary measures.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting of the Section on Pediatrics, Jan. 8, 1903.

Henry Heiman, M.D., in the Chair.

Ultero-Membranous Stomatitis of Vincent.

DR. W. N. BERKELEY presented a boy of six years whose tonsil presented on the upper margin a deeply-excavated ulcer. Smears from this showed the spirillæ and elongated bacilli described by Vincent as characteristic of this form of stomatitis. As yet but little was known concerning the relation of the spirillæ to the bacilli.

DR. CHARLES HERRMAN said he would predict that future bacteriologic study would show that this same ulcerative process occurred in other parts of the body than the throat.

A Case of Malnutrition Apparently Dependent on Hyperplasia of the Blood Vessels and a Small Heart.

DR. SARA WELT-KAKELS presented a little girl who was evidently badly nourished and very anemic. The speaker said that although the child was born at full term she had always been delicate and more backward than her sisters. Since last June she had suffered from severe and constant headache, associated with constipation and loss of appetite. A hypermetropia in both eyes had been corrected by glasses without relieving the headache. Examination showed the cardiac impulse to be in the fourth intercostal space and the peripheral arteries so small that it was frequent in counting the pulse to feel the brachial instead of the radial artery. There was some cyanosis at times. The gastric contents had been examined after a test breakfast with negative result except that there was some deficiency in the hydrochloric acid. The daily quantity of urine was between 350 and 500 c.c. instead of the normal quantity, 1,140 c.c., and the daily quantity of urea was only 6.25 gm. whereas it should be 18 gm. The blood pressure had been determined by means of the Gärtner tonometer to be 69 mm., the normal varying between 100 and 120 mm. Even the microscopic examination of the blood was negative. An x-ray examination of the chest in conjunction with the fluoroscope had given a remarkably clear view of the thoracic organs, and showed plainly the diminutive size of the heart. Dr. Welt-Kakels was of the opinion that the child's condition was mainly dependent on a hyperplasia of the blood vessels.

Report of a Case of Paroxysmal Hemoglobinuria.

DR. CHARLES HERRMAN reported this interesting case, which occurred in a boy of four years, of apparently healthy parentage. In infancy he had presented evidences of congenital syphilis and had been treated for this disease for about twelve months. He was anemic and below the average size of a boy of his age. The heart and lungs were normal, and the spleen was not enlarged. Malaria was excluded by the failure to find the plasmodia in the blood. The attacks of hemoglobinuria came on every few days when the boy first came under observation last fall, the attack usually beginning about 10 o'clock in the morning by irritability and peevishness, which was speedily followed by a sense of weariness, a chill and finally by the passage of dark, bloody urine. It was remarkable how quickly he would recover even from a severe attack; it was no unusual thing to see him playing around again within an hour

after the subsidence of the attack. The urine was found to be acid and albuminous, but it contained no sugar, and the microscope showed no red blood corpuscles. Hemin crystals could be readily demonstrated by the usual means. The speaker said that only about 20 cases of this disease had been placed on record, and of this number about one-half gave a history of congenital syphilis. Physical exertion and emotional excitement were determining causes of the attacks, and they could be brought on by baths or the immersion of an extremity in cold water. When there was a history of syphilis, antisyphilitic medication would effect rapid improvement. The attacks were most frequent in winter, and from the action of chilling in determining the attack it was obvious that these patients should be warmly clad and kept indoors in cold weather.

Otitis Purulenta Neonatorum et Infantum.

DR. MAX TOEPLITZ read this paper. He said that the high fever, often associated with stupor or convulsions, occurring in connection with otitis in early life not infrequently led to an erroneous diagnosis of cerebral disease. A positive diagnosis of meningitis could only be made by means of a lumbar puncture. Fortunately otoscopy was not very difficult in children; it was, however, very difficult in very young infants. When meningitis occurred it was the result of an extension of the inflammation through the mastoid-squamous fissure. Primary inflammation of the labyrinth in children was characterized by fever, convulsions, vomiting, dullness of the sensorium, stiffness of the neck and an irregular pulse. Acute otitis was the result of bacterial infection, usually with the *Diplococcus pneumoniae*, the *Streptococcus pyogenes* or the *Staphylococcus pyogenes*. They gained entrance through the eustachian tube in connection with sneezing or blowing of the nose, or the use of the douche. A child with otitis should be kept quiet in bed, and in the early stages steam and the application of hot water bags were useful, but as soon as there was evidence of pus, the drum of the ear should be freely incised, having first carefully sterilized the ear. The opening in the drum should be in the posterior inferior quadrant. Spontaneous perforation often occurred, but it made an irregular perforation, and the resulting scars were apt to impair the hearing in time. The wiping out of the secretions, followed by dusting with a thin layer of antiseptic powder and the closure of the canal by sterile cotton constituted, in his opinion, the ideal treatment for these cases, but the method was only applicable to cases in which it could be done by the physician himself or by an unusually intelligent and capable attendant. For other cases it would be better to trust to syringing, using irrigations at first every hour, the solution having a temperature of 108 or 110 F.

DISCUSSION.

DR. E. GRUENING said that whoever expected to find on inspecting the ear of a child suffering from acute otitis the circumstances or the general bulging of the tympanic membrane described in the books, would be disappointed, for, more commonly there would only be a general thickening and obscuring of the usual landmarks. The latter condition was, however, a sufficient indication for paracentesis. This winter he had seen a number of cases of otitis complicated with bronchitis, and he had been impressed with the rapidity of the subsidence of the cough after puncture of the ear drum. For children he favored syringing the ear, using a fountain syringe with the bag only a few inches above the patient's head; for adults, the dry method, already described in the paper, was preferable.

DR. E. FRIDENBERG said that he had seen many cases of otitis media in children which had simulated gastroenteric disease. In several instances they had been at first diagnosed as typhoid fever.

DR. CHARLES G. KERLEY said that if those who practiced much among children would familiarize themselves with the appearance of the ear in both health and disease they would be less apt to experience the mortification of seeing a case, diagnosed as pneumonia, suddenly lose all of its urgent symptoms on the appearance of a discharge from the ear. For irrigation of the ear he preferred to use a 1 to 10,000 solution of bichlorid of mercury, as often as every three hours for the first day or two. The nasal douche was a prolific source of ear affections.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Pneumonia.

Hooker, in *Med. Summary*, recommends the jacket of absorbent cotton, mustard paste locally for the pain of any accompanying pleurisy, not allowing blistering to take place. This may be followed by a local application of vaselin. In treating a child two years of age he advises the following:

R. Quininae sulph.	gr. xxiv	1	65
Pulv. opii	gr. ss		03
Ol. theobrom. q. s.			

M. Fl. suppos. No. viii. Sig.: Insert one into the rectum every three hours until the fever abates somewhat, then repeat it three times a day and finally one at night only.

When the foregoing seem to disturb the bowels the following is prescribed:

R. Acidi sulph. dil.	gtt. xxx	2
Quininae sulph.	gr. xxx	2
Syr. zingiberis	℥ss	15
Aque q. s. ad	℥ii	60

M. Sig.: One teaspoonful every three hours, diminishing the dose as the child improves, or increasing it if the fever increases.

The following is of value in reducing the fever:

R. Ammon. chlor.	gr. viii	50
Tinct. aconiti rad.	m. iv	25
Tinct. opii camph.	m. xv	1
Syrupi tolutani q. s. ad	℥ii	60

M. Sig.: One teaspoonful every hour for three hours, then every three hours. When the fever is under control the time may be lengthened to once in four hours.

In cases late in the disease if the heart needs stimulation the following is given:

R. Ammon. carb.	gr. iv	25
Tinct. digitalis	m. xv	1
Spts. frumenti	℥i	30
Syr. tolutani q. s. ad	℥iv	120

M. Sig.: One teaspoonful every three hours; or:

R. Strychninae sulph.	gr. i	06
Syr. tolutani q. s. ad	℥i	30

M. Sig.: Five drops after meals.

As a sequel a lingering cough may be present and under such circumstances the following may be given:

R. Creosoti	m. ii	12
Spts. vini gallici	℥ss	15
Glycerini	℥ii	8
Syr. tolutani q. s. ad	℥ii	60

M. Sig.: One teaspoonful three times a day to a child one or two years of age.

Insomnia.

The following is an outline of treatment of insomnia due to the various causes as suggested by the *Month. Encyc. of Pract. Med.*: In insomnia from pain, morphin, the coal tar products or large doses of chloral are indicated. Insomnia from reflex irritability, chloral, trional, sulphonal, are the best. When it is due to delirium or chronic insanity, hyoseyamin combined with morphin. And when there is loss of sleep from nervousness and worry the bromids should be given in doses of twenty to thirty grains (1.30-2.00) three or four times daily. One must bear in mind that chloral depresses the medulla and is at times dangerous to the heart, lung, kidneys and stomach.

Internal Hemorrhoids.

Ross, in *Virg. Med. Semi-Monthly*, states that in the treatment of hemorrhoids which protrude at stool and can be pushed back by manual effort, he administers a heaping teaspoonful of

compound senna powder the night before the treatment, to be followed by a glass of bitter water or a tablespoonful of epsom salts before breakfast the next morning. Supplement this by a high enema of normal saline solution before the operation; then cleanse the rectal region under antiseptic precautions. The following solution is then injected into the center of each tumor beginning with the tumor highest up:

R. Acidi carbol. (95 per cent.)	3ii	8
Glycerini	5ss	15
Aquæ destil. q. s. ad	3ii	60

M. Sig.: Inject as directed.

When each tumor has thus been treated coat the mass with carbolized vaselin and gently push them well up into the bowel.

If much pain is present some opiate may be given. Rest, a light diet and unmoved bowels are enjoined for two days. Then the compound senna powder may be given again at night, followed by the salts in the morning and instruct the patient to avoid straining. The following ointment should then be given night and morning.

R. Nosophen	5i	4
Cocainæ hyd.	gr. vi	35
Ext. belladonnæ	gr. iv	25
Ung. simplicis	3vii	28

M. Sig.: Apply locally on an applicator introduced well up into the bowel.

The author states that one treatment is generally all that is required.

RECTAL ULCER.

M. G. Price, according to the *Med. Standard*, recommends the following in the treatment of rectal ulcer from whatever cause:

R. Ext. hydrastis aqueous	5iiss	10
Acidi carbolici	m. xxx	2
Glycerini	5ix	36
Ext. hamamelidis flu.	5viiss	195

M. Sig.: Add to one half a teaspoonful of this mixture an equal quantity of starch and two tablespoonfuls of warm water. Inject into the rectum and advise the patient to retain it over night.

Bedsore.

Palmer, in *Merck's Archives*, recommends a method in the treatment of bedsore due to pressure and atrophic changes aggravated by urine undergoing ammoniacal decomposition: A bag of soft linen is made sufficiently large to extend down the thighs and along the patient's spine. This bag is then filled with bran previously moistened with dilute sulphuric acid. Sufficient bran is used to make an easy cushion. By this method the urine which is constantly dribbling from the patient is absorbed by the bran and the sulphuric acid present neutralizes the ammonia. The proportions advised are about two ounces of sulphuric acid to a quart of bran. This should be renewed every second day. It only makes the bran slightly moist.

Diet in Chronic Endocarditis of Children.

Thompson, in *Pract. Dietetics*, states that children who have chronic valvular disease or enlargement of the heart, but who are not strictly confined to bed, should have their habits of eating closely guarded. They should eat slowly and moderately and at regular intervals, the heavy meal should be at noon, and a light supper two hours before retiring. Animal food is as a rule better for them than vegetables, but they may be allowed fresh vegetables, such as spinach, tomatoes or stewed celery. Rice and macaroni may be given. Bread should be eaten only when dry or toasted. Sweets should be omitted from the list, except very rarely jam or preserves may be given. Sweets are liable to cause flatulency and palpitation and excite the heart's action and produce unnecessary strain.

Aspirin in Diabetes.

R. T. Williamson, according to an article in *Med. Age*, recommends the use of aspirin in the treatment of glycosuria and diabetes mellitus. This preparation seems to have the most influence in the less severe forms and is less serviceable in the acute forms in young individuals. In order to produce any reduction in the milder forms it should be given in doses of fifteen grains each four or five times a day. The patient should be watched for the appearance of toxic symptoms. It is best to

begin with a small dose, ten grains two or three times a day and gradually increase the dose.

Acute Gout.

The following outline of treatment is recommended by the *Cleveland Med. Gazette* in the treatment of acute gout:

R. Vini colchici sem.	3iii	12
Spts. ammon. arom. q. s. ad	3ii	60

M. Sig.: One teaspoonful every three hours in water; or:

R. Tinct. colchici sem.	m. xx	130
Potass. bicarb.	gr. x	65
Aq. menth. pip. q. s. ad	3i	30

M. Sig.: At one dose, to be repeated every three hours; or:

R. Ext. colchici rad.	gr. vi	35
Pulv. ipecac. et opii	gr. xii	70
Ext. colocynth. co.	gr. xii	70

M. Ft. pilulæ No. xii. Sig.: One pill night and morning; or:

R. Ext. colchici rad.	gr. x	65
Pulv. digitalis		
Ext. colocynth. co., āā	gr. xx	130

M. Ft. pil. No. xx. Sig.: One or two pills to be taken three times a day.

Yeo recommends the following as a remedy in acute gout:

R. Tinct. aconiti rad.	3i	4
Morphinæ sulph.	gr. ii	12
Antimonii tartarati	gr. i	06
Syr. zingiberis	5ss	15
Aquæ q. s. ad	3ii	60

M. Ft. mistura. Sig.: One teaspoonful every three hours in water; or:

R. Vini colchici	3ss	2
Mag. carb.	gr. xv	1
Aq. cinnamomi	3i	30

M. Ft. haustus. Sig.: To be taken at bedtime.

Pericarditis.

The following combination, as noted in *N. Y. Med. Jour.*, is recommended as a local application in relieving the cardiac pain occurring in pericarditis:

R. Methyl salicylatis	5iiss	10
Menthol	gr. lxxv	5
Essent. lavendulæ	gtt. xv	1
Petrolati	3iiss	10
Lanolini	3i	30

M. Sig.: Apply locally.

Earache.

The following combination was first recommended by G. L. Richards in 1898 in the treatment of earache in children. A full presentation of the subject is given in *THE JOURNAL*, Jan. 24, 1903, page 222:

R. Acidi carbol.	m. vii	50
Ext. opii fluidi	m. vi	35
Cocainæ		
Atropinæ sulph., āā	gr. iii	20
Aquæ	m. lii	340
Gelatin	gr. xviii	120
Glycerin	3iiss	10

M. Ft. Bougies No. xlii. Sig.: One to be moistened and inserted into the ear.

OTTIS MEDIA PURULENTA.

The following is recommended by N. G. Ward in *Amer. Ther.*:

R. Formalin	gtt. v	30
Alcoholis	3ii	8
Aquæ q. s. ad	3i	30

M. Sig.: To be dropped into ears as occasion demands.

Tinnitus Aurium.

Lewis, in the *Phila. Med. Jour.*, states that the administration of nitroglycerin or the inhalation of amyl nitrite will lessen the ringing in the ears due to anemia and increases that due to hyperemia. In the latter affection the general health should be improved and sedatives given. Hydrobromic acid is of the greatest service and should be administered in fifteen minim doses three times a day, well diluted in water. If the labyrinth is congested pilocarpin is of most value. When the tinnitus is unaccompanied by deafness a solution of strychnia,

gr. 1 to the ounce, should be introduced through the eustachian catheter into the tympanic cavity.

The following combination is advised by Gleason in the catarrhal forms:

R. Argenti nitratis.....	gr. 1/4	015
Ext. hyoscyami.....	gr. 1/3	020
Strych. sulph.	gr. 1/30	0020

M. Ft. pilula No. i. Sig.: One such after each meal.

Ammonium muriate is recommended in tinnitus of nervous origin. Conium hydrobromate, gr. 1/60 three times a day and tincture of arnica in fifteen minim doses have also been used with success.

Diarrhea in Puerperal Infection.

According to the *Rivista Medica* the following is of service in checking the diarrhea in puerperal infection:

R. Calcii chloridi	3ss	2
Tinct. opii	gtt. xx	130
Syr. morphinae	5v	20
Aque lactucarii	3viii	240

M Sig.: One tablespoonful as required.

Medicolegal.

Ten Thousand Dollars for Fracture of Thigh.—In the case of *Waldie vs. the Brooklyn Heights Railroad Company*, a licensed Sandy Hook pilot met an accident which resulted in a fracture of the thigh, with permanent disablement, and the loss of his occupation, involving the diminution of income to the extent of \$125 a month. Under these circumstances, and in view of other recoveries which have been upheld, the Second Appellate Division of the Supreme Court of New York holds that an award of \$10,000 damages could not be considered excessive.

Liability of Hospital for Assault on Patient.—The case of *Galesburg Sanitarium vs. Jacobson*, as it is entitled in the Appellate Court of Illinois, Second District, was brought by the latter party to recover damages from the former, a corporation conducting a hospital, in which he was a patient for some two months, and, he alleged, was assaulted, beaten, mistreated and injured by the servants and employees of the institution. He was ill, the court says, and was a patient residing at the hospital for treatment, and was paying for the services he received, and he was entitled to reasonably kind treatment, so far as the nature of his malady would allow. No assault on him was justifiable, except so far as it was necessary to control him at times when he was insane or delirious. On the occasion in question the servants unnecessarily abused him, and inflicted on him injuries for which the jury were warranted in holding the master responsible. There was no claim that this was a charitable institution, nor any question as to its liability for the negligence of its employees on that account. The fact that the jury awarded but \$100 as damages indicated they were not governed by passion or prejudice.

Good Consideration to Support Action for Services.—Several weeks after his daughter, without his knowledge, went to a hospital for medical treatment a father, on learning, through the physician who treated her, about her condition and what the bill for her treatment and board in the pay department was, promised to pay it, but died without doing it. The physician sued the administrator of the father's estate for the amount of the medical services rendered the daughter, and obtained judgment therefor, which the Supreme Court of Mississippi affirms, in the case of *Biglane vs. Hicks*. It says that there was no evidence on which it could be said that the debt sued for was charged originally to the daughter, so as to bring into the decision of it the question of the statute of frauds, which requires a promise to answer for the debt of another to be in writing. And it holds that if the father was not liable for the services sued for, because they were rendered to a helpless member of his family, who sorely needed them, yet continued service and treatment of the daughter for several weeks by the physician, at the special request of the father, on his promise to pay for the services sued for, as well as for

future services, constituted a consideration to support this action.

When "Totally Disabled and Confined to the House."—In *Mutual Benefit Association vs. Nancarrow*, where the former insured the latter and, it was alleged, promised to pay him a certain sum per week if, from certain causes, he should be totally disabled and confined to the house, the Court of Appeals of Colorado holds that the words "totally disabled," as well as the words "confined to the house," must receive a reasonable interpretation. The purpose of the policy was to indemnify the insured against loss occasioned by inability to attend to his work or business on account of sickness. The total disability contemplated by the instrument did not mean a state of absolute helplessness. The insured might have been able to walk—he might have been able to ride on the car to his physician's office—and still have been entirely incapacitated for work or business. In view of the object of the contract, if he was so incapacitated, he was, the court thinks, totally disabled, within the meaning of the policy. Nor, applying the same rule, does the court think that the words "confined to the house" were intended to mean a constant restraint within doors. One may be sick, it says, and still able to move about and, on occasion, temporarily to pass to the outside. A complete and enforced withdrawal from business or work was undoubtedly necessary, under the policy; but exceptional and temporary absences from the house were not inconsistent with the idea of a general confinement within it. The complaint said that the insured was confined to the house, except at intervals, when he rode on the cars from his house to his physician's office; and, the court thinks, a sufficient confinement was alleged, to answer the requirements of the policy.

Fixing Compensation for Attending Smallpox Patients.—Section 5 of chapter 123 of the Laws of Maine of 1887 provides that the municipal officers "shall regulate and audit all fees and charges of persons employed by each board of health, in the execution of the health laws and of their regulations." In the case of *Clement vs. the City of Lewiston*, an action brought by a physician to recover for professional services rendered in attending smallpox patients, no specific sum was agreed on for his compensation. He was employed by the secretary of the board of health of the city. The city claimed that it was a condition precedent to the physician's right to maintain the action that the municipal officers had discharged the duty imposed by said section 5, or to show an attempt on his part to have them do so. The presiding justice instructed the jury that if the municipal officers failed to make any regulation or auditing of his account at the time, and there being, when these services were performed, no regulation touching the fees and charges to which he might be entitled, then he was entitled to recover a reasonable compensation. The Supreme Judicial Court of Maine holds that this ruling was correct. It says that the municipal officers could have fixed the fees before the services were rendered, and if they had done so, and it was known to the physician, his rendition of services after that would be regarded as an acceptance of the terms made by the municipal officers, and his right to recover would be limited to that. In the absence of such action by them for any services rendered by the physician under a legal employment the city impliedly promised payment therefor of a reasonable sum. The right to "regulate" fees should be exercised, if at all, before the services are rendered. To "audit" charges in bills rendered does not mean to determine their amount in the sense of binding the other party. To audit is "an examination in general"; "an examination of accounts"; "compare the charges with the vouchers" Webster. On such auditing the bill would be approved or rejected. If rejected, it would not preclude recovery if the physician had a meritorious cause of action. Such auditing can not be regarded as a condition precedent to recovery. The physician's rights did not depend on approval of the municipal officers. This statute gives certain authority to municipal officers and imposes a duty on them, but it is directory. It does not make it the duty of the physician to procure their action before enforcing his claim. Offered evidence of the action of the municipal officers after the physi-

cian's services were rendered, in attempting to fix the amount of his compensation, was rightly excluded. One party to a contract, after performance by the other, can not determine the amount of compensation without the consent of the latter. An offer to prove amounts paid by the city for similar services in previous years was also rightly refused. Such payments might have been on express contracts, or been the result of a controversy or compromise, or have been for services rendered by physicians of small experience or limited skill or reputation, or under peculiar and exceptional conditions. It would be unsafe, and might be unjust, to adopt them as a criterion for the compensation to which the physician suing was entitled.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal.

February 28.

- 1 *Notes on Plague as Observed by the Health Authorities of Sydney, New South Wales. G. Frank Lydston.
- 2 Cases of Intestinal Reaction, with End-to-End Union. C. S. Hamilton and W. D. Hamilton.
- 3 *The Diagnosis and Treatment of Contracted Pelvis. Warren R. Gilman.
- 4 *Hypodermoclysis; Experiments, Technic and Clinical Uses. Robert C. Kemp.
- 5 Medical Organization and the Present Status of the Code of Ethics of the American Medical Association. Charles A. L. Reed.

1. **Plague in Sydney.**—Lydston gives a very interesting account, calling attention to the absence of contagion by fomites, the method of infection through insects and the part borne by rats, which is strongly confirmed by the Sydney experience, the non-contagious character of the bubonic and septicemic forms, and the possible contagion of the pneumococcal type. It is apparently difficult to determine just what ships have brought the plague to port, as rats carry the disease for a considerable period. One animal affects another during the voyage, so that fresh cultures are brought to port. The interesting points are the cerebral toxemia, decline in mortality after the seventh day, speedy death, which is attributed either to the relatively large doses of multiple "bite" inoculations or to individual susceptibility, or to both together, and the trivial nature of the buboes, which seem to be only casual phenomena. Prevention seems to be reduced to simply the prevention of rats from going ashore, frequent fumigation of ships, knowledge of the health of rats in the exposed cities, and the keeping down of their numbers, isolation, general cleaning up, fumigation of infected and suspected premises and the clearing up of plague infection. The prophylaxis of plague is an expensive matter. Sydney has expended as high as \$6,000 or more a month in the extermination of rats alone.

3. **Contracted Pelvis.**—Gilman calls attention to the importance of the condition, and gives the generally known facts in regard to the viability of the fetus within certain diameters. In case of slight or moderate contraction, he thinks it is best to leave the patient alone as long as progress is being made. He insists on the practical value of pelvimetry and the low mortality of cesarian section, which is less than 5 per cent. under proper conditions. It should never be performed, however, on an exhausted patient or one exposed to infection.

4. **Hypodermoclysis.**—Kemp has experimented on animals to test the rapidity of absorption and the specific action of normal saline solution on the kidneys, finding that it promotes renal secretion and reduces renal congestion. The technic and indications are given at length. It will be of value in the following conditions:

In diarrheas with excessive loss of fluid, as in dysentery, cholera, cholera morbus, cholera infantum, typhoid and allied diseases; pneumonia, septicemia, pyemia, peritonitis, pyelitis, septic endocarditis, puerperal sepsis, purpura hemorrhagica, severe burns, toxemia due to colon bacillus, tetanus, jaundice, plague, yellow fever, scarlatina, measles, typhus, diabetes, shock; hemorrhage from any cause; as an eliminant in diphtheria, following antitoxin injection; in toxemia of diphtheria, or from any cause; in any coma due to toxemia; in puerperal eclampsia—preceded by venesection; in oliguria, uremia, suppression of urine, renal congestion; in pulmonary edema, pleurisy with effusion, or ascites due to oliguria; in poisoning, as an eliminant, as from carbolic acid, alcohol, opium, car-

bonic acid gas, and especially in belladonna poisoning. In the last condition frequent catheterization should be employed.

He notices the possible use of hypodermoclysis with sodium salicylate as a diuretic, and the assertion in France that in cipient tuberculosis can be diagnosed by means of reaction which occur from this agency. Kemp does not, however, consider this assertion confirmed by his own observations. He thinks it might be useful in toxemias and the high temperature of tuberculosis, but not likely to have any specific effect on the disease. Dr. J. L. Barton has conducted some clinical experiments, as yet unpublished, in which these views are confirmed and it will probably be worthy of further trial in selected cases as an adjunct to other treatment.

American Medicine, Philadelphia.

February 28.

- 6 *Are Antiseptics of Any Value in Hand Disinfection? Edgar R. McGuire.
- 7 *Chronic Sphenoid Abscess. Lewis S. Somers.
- 8 Chronic Diarrhea. Edwin Zugsmith.
- 9 *Cancer Statistics in the Twelfth Census of the United States. Harris Moak.
- 10 *An Interesting Modification of Technic in Penrose's Operation for Nephropexy. Frank Donaldson.
- 11 *Briefs on Physical Training. G. Frank Lydston.
- 12 The Use of Truth and Falsehood in Medicine: An Experimental Study. Richard C. Cabot.

6. Hand Disinfection.—McGuire concludes that:

1. Absolute sterility of the hands is impossible by any method.
2. There is no royal road to sterilizing the skin—nothing takes the place of long and vigorous mechanical scrubbing.
3. The longer the hands are scrubbed under aseptic precautions the nearer the approach to sterility.
4. The use of antiseptics on the skin is, at least, questionable; under the usual conditions, it is distinctly harmful.
5. When the true value of antiseptics is understood we will have cleaner hands, due to more conscientious scrubbing.
6. The use of rubber gloves, while not ideal, is the nearest approach to it.
7. The operator whose hands perspire freely ought to wear gloves in every case, regardless of all objections to them.

7. **Chronic Sphenoidal Abscess.**—Somers holds that this condition is not infrequent, but not usually diagnosed. He gives the anatomic data as to the parts involved and the symptoms, noticing particularly the constant nasal and pharyngeal symptoms, pain, ophthalmic symptoms when present, and reports a case. The treatment is outlined, embracing free drainage of the sinus and cleansing of the parts.

9. **Cancer.**—Moak analyzes the Twelfth Census statistics as regards cancer, and finds that cancer and tumor have not increased in any great proportion over several other diseases common in adult life and old age. The geographical distributions correspond almost exactly to that of people of greatest age, and cancer and tumor are, therefore, most frequent in those sections where old people are more numerous.

10. **Nephropexy.**—The method of technic here described by Donaldson is that of Dr. Milbank Johnson of Los Angeles, which is the same as that of the Penrose-Beyea operation until the quadratus is opened, the perirenal fat exposed, the space of Gerotta entered and the kidney separated by blunt dissection from its fatty capsule. Johnson's procedure from this point is:

He makes an incision the length of the kidney through the fatty capsule, the latter being dissected from the kidney but not removed. He then makes four openings about 15 mm. on either side of the main incision. These incisions of course go through skin, fascia, and muscle. The catheter is then passed through the opening, on through the fatty capsule a few millimeters to the side of the main incision in the same, around the kidney proper about 1 cm. from and above the ureter and renal vessels and out through the fatty capsule and the opening on the opposite side. Similarly, a second catheter is introduced through the third opening and brought around below the ureter and vessels of the kidney and out through the fourth opening. The incision in the fatty capsule is then closed and the main muscular incision brought together with continued sutures of catgut and a subcuticular silk-worm-gut stitch for the skin. The operator is now ready to manipulate the catheters. There is of course absolute freedom of movement and taking one end in either hand the kidney may be placed in relatively any position toward the abdominal wall which the operator sees fit; in other words, he can get the exact tension on the kidney he desires. Having satisfied himself that the organ is properly placed, the ends of the catheters are clamped together. Emerging as they do from the side of, instead of through the original wound, they tend to draw together the sides of the same instead of forcing them apart as is the case in Penrose's method.

His method of bringing out and fixing the ends of the catheters greatly facilitates the healing and dressing of the wound and comes nearer to the ideal of what the operation of nephropexy should be.

11. **Physical Training.**—Lydston calls attention to the individual equation. Each person should be studied by himself. He notices the differences in the chest form and capacity, the short and thick and the long and shorter muscles and tendons and the different methods of treatment which they require. The evils of athletics are noticed; over-development of muscles and organs often leads them to degenerate from disuse when change in occupation that inevitably follows in many cases is taken up. He thinks the training habit is hard to break; it is as bad as the alcoholic habit in many cases and, while in many instances no particular disaster occurs, there are numerous cases where serious consequences result.

Medical News, New York.

February 28.

- 13 *A New Use for Thyroid Extract: A Cure, or at Least a Complete Control of Hemophilia Through Its Administration; Its Effect Also on Another Form of Hemorrhage. Eugene Fuller.
- 14 *Cortical Hemianopsia and Sector Defects of the Visual Field. Edward Jackson.
- 15 *Ossiculectomy. Edward B. Dench.
- 16 *The Discrepancy between Clinical Manifestations and Pathological Findings in Appendicitis. Nathan Jacobson.
- 17 *The Treatment of Typhoid Fever. G. Wythe Cook.
- 18 *Aseptic Surgery on the Niger Delta. Frederic Griffith.
- 19 *Remarks upon Adherent Pericardium. Geo. M. Swift.
- 20 *Hyoscin in the Treatment of Morphinism; Its Office and Value. George E. Pettey.
- 21 *The Scope of Vaginal Section. Egbert H. Grandin.

13. **Hemophilia and Thyroid Extract.**—Fuller reports a case of hemophilia in a boy treated unsuccessfully by other remedies and relieved by $2\frac{1}{2}$ gr. of thyroid extract three times a day. The second case was in a man about 55 years of age, who had hematuria almost constantly from the prostatic sinus, which was also similarly relieved with good results, using 5 gr. doses three times a day.

14. **Hemianopsia.**—Several cases of hemianopsia are reported and discussed by Jackson. Two of them seemed to support the view of Hun, Wilbrand and Henschen, that the upper lip of the calcarine fissure is connected with the upper part of the retina, having to do with the lower quadrants of the field.

15. **Ossiculectomy.**—Dench finds the indications for ossiculectomy in three classes of cases: 1. Those in which the patient is suffering from what is commonly known as chronic non-suppurative otitis media with intact drum membrane, and where operation is undertaken either for the improvement of the function of the organ or for the improvement of certain symptoms, such as subjective noises and vertigo. 2. Those cases in which operation is undertaken primarily for the relief of chronic suppuration, the removal of all dead bone, etc., the main object being to cure the otorrhea. 3. Cases where there has been previous suppuration, but it was so slight as to cause no inconvenience, but the results of the suppurating processes remain, binding down the ossicular chain by adhesions and impairment of function. The paper gives a lengthy discussion on operations.

16. **Appendicitis.**—Jacobson reports cases showing the occasional obscurity of symptoms in appendicitis and emphasizes the fact that we must not depend too much on the so-called nervous symptoms, or be misled by apparently mild constitutional manifestations. Local signs are to be regarded as more significant and reliable. The persistence and aggravation of any manifestation is to be viewed with alarm and suggests progress of the disease. The diagnosis of catarrhal appendicitis, because of the apparently mild symptoms presented, is often unwarranted. The restriction of the inflammatory process to the mucous surface of the appendix without ulcerative destruction is probably rare. True conservatism, if by that we mean the conservation of life, is along surgical and not medical lines in every case of progressing appendicitis. Lastly, every case in which the diagnosis of appendicitis can be made, demands surgical rather than medical care. The question is simply as to when a surgical operation should be performed, and the earlier the better the results.

17. **Typhoid Fever.**—Cook's article gives the general treatment of typhoid. He would keep the patient on a liquid

diet. He thoroughly believes in hydrotherapy and that the greatest care should be exercised in returning to the solid diet. Constipation is, he finds, more frequent than the opposite condition. An enema is generally sufficient to relieve it.

19. **Adherent Pericardium.**—Swift thinks that we should be aware that such a condition is not rare, that the great irregularity of action, the patient not appearing as ill as the great irregularity of heart action would indicate, the indraw of intercostal spaces with systole, the marked dyspnea and consequent apprehension, and the great enlargement of the liver, with or without ascites, are important diagnostic signs. In hospital cases the prognosis is bad, but in private practice he has known cases where life has been continued many years. He thinks with proper treatment, abundance of nitrogenous food, arrest of the rheumatic poisoning, we might give a fairly good prognosis.

20. **Hyoscin in Morphinism.**—Pettay advocates the use of hyoscin and criticises Crothers and Mattison, who condemn it. He thinks no remedy is better indicated. It is as important in the treatment of morphinism as chloroform and ether in the practice of surgery. Its office is very similar. It saves the patient from indescribable suffering, and renders the unsafe, impracticable and difficult, safe, practicable and easy.

21. **Vaginal Section.**—Grandin thinks vaginal incision commends itself for diagnosis, palliative treatment and for curative purposes. It is specially indicated in tumors that can be removed through the pelvic brim, but in cases of salpingitis of the right side, with ovarian abscess, especially with adhesions or involvement of the appendages, it is contraindicated. Unruptured and non-adherent ectopic gestation falls within the scope of vaginal section. He does not favor it generally in uterine displacement, which he thinks falls rather outside its scope.

Boston Medical and Surgical Journal.

February 26.

- 22 *A Few Remarks on Blood Pressure. James M. Jackson.
- 23 *Intestinal Obstruction Below the Ileocecal Junction. (To be continued.) Thomas H. Manley.
- 24 *The Treatment of Hemorrhoids. John O'Connor.
- 25 The Use of Cargile Membrane in the Nose in Order to Prevent Adhesions. Harris P. Mosher.
- 26 Gonorrheal Urethritis without Symptoms. Arthur L. Chute.

22. **Blood Pressure.**—The means of ascertaining blood pressure are described by Jackson, who thinks that anyone who wishes to take the blood pressure should be equipped with a mercury manometer, in the first place, and then have the Riva Rocci armlet and the Gaertner finger ring. With the Riva Rocci the blood pressure should be taken with the patient in the recumbent position, and with the Gaertner method the patient may either lie down or sit up, but the finger should always be on a level with the heart. The patient should be under no mental excitement, which would cause elevation of tension. Two readings at least should always be taken. If they agree, the observation may be considered correct; if there is a marked difference, there has been some mistake, and the test should be repeated. He has used it in testing the effects of bromid of quinin in exophthalmic goiter without seeing any variation of the blood pressure of any account. He has found it of decided value in cases of nephritis and arteriosclerosis as an aid to diagnosis. The blood pressure is normally higher in males than in females. While a pressure of 140 to 150 may be normal for a man, it is abnormal for a woman. Elderly people generally have an elevated pressure, owing to arterial rigidity. Low pressures are not common. It is high pressure we have to deal with principally. A pressure of 200 or more may be considered more or less dangerous, while that of 250 or over is very dangerous, and only seen in grave cases. Higher than these are recorded, but are rare and probably only occur in bad head injuries. He urges all who are teaching or doing clinical work to try this new method of testing the blood tension.

23. **Obstruction of the Large Intestine.**—Manley describes the various forms and sites of the strictures that may occur, such as from malignant disease, syphilis, gonorrhea, etc. Stricture of the large intestine is rarely if ever impermeable,

and it is never sudden or acute in its etiology. It is different from that of the small intestine, as a general rule, depending on intrinsic instead of extrinsic influences. The treatment should not be too radical. There is seldom extreme urgency, as in case of obstruction of the small intestine. He uses measures that will not jeopardize life. Sedatives, local and constitutional, are important. Quicksilver has been employed with success in some cases; hot stupes, kneading the abdominal walls, massage, electrization, etc., in proper cases are valuable. Rectal enemata and instrumental dilatation are the most helpful means of relief in nearly every case, but they should be used with discrimination. A long, stiff rectal tube should be employed, with caution lest serious harm may result. Dilatation of any segment of the large intestine, excepting the rectum, by bougies or sounds is a reckless proceeding, especially in malignant growths, but it may be of value in rectal strictures. Still, he has seen mortal shock follow an attempt at canalization of a scirrhus in a firmly strictured rectum.

24. Hemorrhoids.—O'Connor advocates the Whitehead operation, and describes its technic as performed by him.

Medical Record, New York.

February 28.

27 *Remarks on Achylia Gastrica and Pernicious Anemia. Max Einhorn.

28 *Recent Researches on the Voice. E. W. Scripture.

29 *Doctrine of Survivorship In Case of Two or More Deaths in a Common Disaster. Theodore Sutro.

30 *The Etiology and Prevention of Senile Cataract. J. Wilkinson Jervey.

27. Achylia Gastrica in Pernicious Anemia.—Einhorn gives his experience on the possibility of achylia returning to the normal condition, and reports several cases, and on the abrupt development of the condition in pronounced cases of hyperchlorhydria and, after many years' persistence, spontaneous return to the normal state. He gives a tabulated statement of the blood examinations in some 15 cases, several of which have a close resemblance to pernicious anemia, and he discusses the latter condition. His experience is against the assumption that pernicious anemia is caused by atrophy of the stomach, for the following reasons:

1. In most cases of achylia gastrica a nearly normal condition of the blood is found.

2. We occasionally observe the presence of gastric juice in cases of pernicious anemia, sometimes even in an increased amount. If pernicious anemia were caused by an atrophy of the gastric mucous membrane, the achylia would have to be well marked, as soon as the symptoms of the blood disease are apparent.

We can not deny that achylia and pernicious anemia may occur together. These cases are, however, in the minority, and would probably point to the fact that there is a common cause for both affections, or that pernicious anemia finds a ready soil in cases of achylia.

28. The Voice.—Scripture describes the methods of taking graphic voice curves and the bearing of the results on the production of tones.

29. Survivorship.—The legal question of survivorship is discussed by Sutro, president of the New York Society of Medical Jurisprudence. It was suggested by the recent Fair case in France, which has been before the French and California courts. He holds the presumptions of the Roman law, based as they are entirely on age and sex, and likewise the statutory presumptions in vogue in some countries of simultaneous death, appear neither of them to rest on any logical foundation. The most reasonable and logical rule, he says, would seem to be one which has been most generally adopted in our law, namely, that when it is necessary or important to ascertain or consider which of several persons survived, and there is no evidence, no presumption whatever will be indulged in, but the conclusion adopted that all perished simultaneously.

30. Senile Cataract.—Jervey discusses the prophylaxis of senile cataract, and sums up that:

Many cases of cataract, especially of the senile form, are started and aggravated in their progress by the friction of a ceaselessly moving iris, which has been roughened, hardened, stiffened, thickened, by disease. Many of these cases can be arrested, or their advance indefinitely postponed or prolonged, chiefly by the careful performance of the simple little operation of sphincterectomy.

Philadelphia Medical Journal.

February 28.

31 *Tropical Diseases; Abscess of the Liver. (Continued.) C. F. Kieffer.

32 *Surgical Affections of the Biliary Tracts. (To be continued.) John B. Deaver.

33 Rupture of the Urethra; Pyosalpinx; Excision of Tumors of the Neck. Thomas H. Manley.

34 *Is Nephroptosis Hereditary? John G. Sheldon.

35 A Case of Trigeminal Neuralgia Complicating Typhoid Fever. Charles J. Aldrich.

36 *The Toxemia of Pregnancy. William H. Wells.

31. Tropical Diseases.—This sixth lecture by Kieffer deals with the prophylaxis and treatment of tropical dysentery. The first indication is removal of the etiologic factor, destruction of the ameba and elimination of intestinal bacteria by the remedies mentioned, such as silver nitrate, etc. He adds protargol to the list. Next comes the relief of the chronic liver congestion, and here he advises draining by purgation, noticing the saline sulphates as useful. Alcohol should be prohibited, and the meat diet restricted. Counter-irritation by dry heat or poultice may be employed for the liver engorgement and in severe cases hepatic phlebotomy is indicated. When active dysentery is present the use of ipecac as in acute dysentery may have a marked effect, as well as quinin where malaria is present. Explorations for suspected pus must be frequent and searching, and the details are described, as well as that of the operation by incision. Rigid asepsis, of course, must be employed. Kieffer disagrees with the advice to scrape the abscess wall and, ordinarily, would not wash out the abscess. If the sac be very large, making a counter opening necessary, then washing of the sac is safe. If, after operation, amelioration of symptoms does not ensue, the conclusion is forced on us that another focus has formed that must be searched for. Similarly in cases where rupture has taken place, into the lung or bowel, and the symptoms continue, an attempt must be made to evacuate the cavity through the skin.

32. Surgery of the Biliary Passages.—Deaver's article is a general description and discussion of the conditions of biliary surgical disease.

34. Nephroptosis.—The question whether nephroptosis is inherited is raised by Sheldon. He gives an account of a family in which five members were thus affected, all females. None of the other members of the family were examined. He thinks the condition occurs more often in children than is suspected, and reports a case where it was found, producing unfavorable symptoms, relieved by operation.

36. Toxemia of Pregnancy.—Wells' article is concluded in this issue. He discusses the diagnosis, which is made from the symptoms and the amount of solids and urea excreted. Albumin alone is not sufficient for the diagnosis. The symptoms may somewhat resemble hysteria, and hysteria may be caused by toxemia. Occasionally they may simulate acute indigestion and sometimes miscarriage. In the majority of cases the prognosis is good provided the patient is under a physician's care and disease of the liver and kidneys is absent. He would say that the prognosis for a pregnant woman whose excretions were faulty, was only good in so far as she followed out the advice of the attending physician. The most important point in treatment is to increase the elimination by the bowels, kidneys, liver and skin. He would cut off the meat diet in most patients, giving a moderate amount of nutritious food; fruits, vegetables rich in starch may be allowed, but sandwiches and stimulating diet, coffee and tea are prohibited as a rule. Malt liquors are bad; the least harmful, if alcoholic beverages are insisted on, are the dry Rhine wines. The clothing should be such as to increase elimination by the skin. A suitable amount of outdoor exercise, taken short of fatigue, and the free ingestion of water, to increase the action of the kidneys, are advised. The patient should take at least a full glass of Buffalo or Londonderry lithia or apollinaris or some carbonated water before each meal, at bedtime and on rising in the morning. The laxative waters serve a double purpose, but their taste is objectionable to many persons. Sweet spirits of niter may be given, and in severe cases of toxemia with high pulse tension, he would give some cardiac depressant like veratrum viride, or if syncope or cardiac irritability is present, digitalis either alone or with small doses of nitroglycerin, will give good results. He

speaks particularly of calomel as an eliminative and the use of a cathartic, preferably the salines, keeping up the laxative for a number of days until the patient has had a sufficient number of profuse watery stools. Bowel irrigations and lavage are also required in some cases.

Cincinnati Lancet Clinic.

January 28

- 37 *Aprosexia in Relation to the Eye, Ear, Nose and Throat, Especially in Child Growth. Derrick T. Vall.
38 Medical Squibs. Broe S. Hoie.
39 Surgery of Prostate, Pancreas, Diaphragm and Spleen. (Surgery of the Pancreas.) (Continued.) B. Merrill Ricketts.

37. Aprosexia.—This condition, first described by Guye in 1887, is specially emphasized, as it has occurred in Vall's experience. He thinks it may cause various impairments of the mental development as well as ocular defects. The storm center, of course, is in the nasopharynx. He says we should not wait for nature to "outgrow" the defect or disease. The results of proper treatment are brilliant.

St. Louis Medical Review.

February 21

- 40 Why Condensed Milk and the Proprietary Foods Are Imperfect Foods for Infants. John Zahorsky.
41 Criminal Abortion. L. E. Newman.

February 28

- 42 *Radical Relief of Chronic Deafness, with Aural Vertigo or Headnoises, by Resection of the Auditory Conducting Mechanism. Robert Barclay.
43 A High Degree of Convergent Squint in a Patient Thirty-eight Years Old—Operation and Result. J. E. Jennings.

42. Ossiculectomy.—The practical lesson which Barclay wishes to convey in this article is that clinical experience seems to confirm the opinion that resection of the auditory conducting mechanism, properly done, will radically relieve deafness—no matter of how long standing, nor however treated heretofore—proportionately to the distinctness of the following characteristic symptoms when found together, namely, speaking habitually in an abnormally moderated or low tone of voice, with better hearing in a noise.

Medical Age, Detroit, Mich.

February 10

- 44 *Chronic Proctitis. J. A. MacMillan.
45 Acetozone in Typhoid. John F. Bennett.
46 *Some Habits of Malaria not Controlled by the Mosquito. Charles Hicks.

44. Chronic Proctitis.—MacMillan thinks that in many cases of constipation or diarrhea where the cause is not readily found, a thorough rectal examination should be made. Acid or drastic cathartics produce much irritation and congestion of the rectal mucous membrane, especially in cases of chronic proctitis, and should be restricted in their use and saline cathartics substituted. Physical exercise in certain cases of constipation is harmful. Straining at stool is particularly injurious where there is hypertrophy of the rectal membrane. A temporary prolapsus is produced and this causes occlusion.

46. Malaria.—This article of Hicks is an interesting study of medical geography. He points out that a certain region over the cretaceous formation in Georgia is the special home of hemoglobinuria, which is absent from the surrounding country. He attributes this hypothetically to the bad drinking water in this region. The estivo autumnal parasite is found in both sections. He suggests also a certain connection between the diet and malaria.

Journal of Tuberculosis, Asheville, N.C.

January.

- 47 *On the Relations between Human and Bovine Tuberculosis. P. von Baumgarten.
48 *The Cinnamic Acid (Hetol) Treatment of Tuberculosis. A. Landeier.
49 The Urinary Calcium Excretion in Tuberculosis. Alfred C. Croftan.
50 *The Early Diagnosis of Tuberculous Laryngitis. Richmond McKinney.
51 *Methylene Blue in Consumption. Henry Herbert.
52 *Tuberculosis of the Cervical Lymph Glands. Daniel Eisen-drath.

47. Human and Bovine Tuberculosis.—Professor von Baumgarten agrees with Koch in the non identity of these two conditions in all respects. He is convinced that the tuberculous human subject is the principal if not the sole source of

infection of others. He does not, however, fully agree with Koch that the sputum is the sole source of infection, and thinks the ingestion of tuberculous food has more or less to do with it. He lays special stress on heredity.

48. Cinnamic Acid in the Treatment of Tuberculosis.—Landeier, the originator of this method of treatment, gives his views and experience. He finds in the early cases about 90 per cent. of cures. In the more advanced cases, the weaker the patient the smaller the dose that should be given, continued over long periods. Cases are reported. In no other form than pulmonary tuberculosis does the method yield such good results. Laryngeal tuberculosis, so long as it is isolated, that is, not associated with extensive changes in the lungs, offers a good prognosis, but is unfavorable if it occurs late in connection with extensive pulmonary involvement. Patients with laryngeal tuberculosis require large doses, 20 to 25 mg. Intestinal tuberculosis is a favorable field, even if fever is present. It must be remembered, however, that during treatment signs of intestinal stenosis may appear. In renal tuberculosis the tubercles undergo cicatricial changes, but no effect is seen on co-existing purulent catarrh; therefore the clinical results are negative. Simple tuberculosis of the bladder yields a somewhat better prognosis, and very good results and permanent cures have been obtained in tuberculosis of the epididymis and vas deferens. The glands and serofulous processes yield mostly favorable results, though sometimes they are tedious and require long treatment. The suppurating gland should be curetted and dusted with hetokresol (cinnamyl metakresol) and be drained. Surgical tuberculosis also gives a good prognosis. The suppuration is not influenced, however. Tuberculous wounds heal rapidly when dusted with hetokresol. Skin tuberculosis yields nicely to cutaneous injections of an alcohol solution of cinnamic acid, 1 part in 10. Treatment, however, is tedious. No good results have been obtained in brain tuberculosis.

50. Tuberculous Laryngitis.—A safe general rule, according to McKinney, is that when there is a persistent laryngeal catarrh with evidence of hoarseness not yielding to the ordinary measures, it should be regarded with suspicion and the case closely investigated and the lungs minutely examined. A peculiar sticking sensation in the region of the larynx is another constant symptom in the early stage. There are, of course, other conditions that may have identical symptoms, and syphilitic infection should be borne in mind and potassium iodid administered.

51. Methylene Blue in Consumption.—Herbert finds methylene blue of no special advantage in consumption; but it may relieve the cough and reduce expectoration. It is contraindicated in sensitive or hectic cases.

52. Tuberculous Glands.—Eisendrath points out the special diagnostic features of conditions that may be confounded with tuberculosis, such as Hodgkin's disease, syphilis, epithelioma, etc. He thinks the treatment should be a radical one. The only exceptions are in children and in others where operation is not proper on account of slight gland involvement, and where family inheritance shows a strong tuberculous tendency and there are suspicious signs in the lungs. It is also inadvisable in much debilitated anemic children, especially if complicated with chronic bronchitis. External applications, especially iodine, do more harm than good.

Interstate Medical Journal, St. Louis.

February.

- 53 *Experiments with the Formalin Treatment for Streptococcus Infection in Rabbits. Oscar H. Elbrecht and C. A. Snodgrass.
54 *Operations for Cancer of the Mouth and Neck. G. W. Cille.
55 A New Surgical Table. Bransford Lewis.
56 Address of Welcome to Professor Lorenz. H. Augustus Wilson.

53. Formalin in Septicemia.—Elbrecht and Snodgrass have experimented on the effects of formalin in the blood on the metabolism of normal animals, and also of those in which septic infection exists. They have found that normal rabbits can bear formalin dilution of 1 to 500 when given in doses proportional to a liter in man, but in later experiments they have used a weaker dilution, 1 to 2000 to 1 to 5000, which is

safer. Thus far they have had two apparent recoveries as a result of this treatment. One rabbit, however, died later when, according to temperature records, he had become convalescent. The other has since become normal. Thus far they have injected 13 rabbits with formalin ranging in strength from 1 to 5000 to 1 to 500. With the exception of 3 which were killed for examination and 1 that died, the other 9 are living and in apparently normal condition. Four streptococcus infected rabbits were treated with normal saline solution, 2 died, 1 is apparently passing into a state of recovery, the other, being immune, was not treated. Two streptococcus rabbits were treated with 1/5000 dilution of formalin in normal saline solution; both died. Two rabbits similarly infected were allowed to go untreated, and both died on the second day, showing the culture to have been intensely virulent. Three streptococcus rabbits were treated with a 1/2000 dilution of formalin in water, and 2 recovered, 1 died. The third was allowed to go untreated and died in thirty-six hours. They do not attempt to draw conclusions from this limited number of experiments, but simply offer them for what they are worth.

54.—See abstract in THE JOURNAL, XXXIX, p. 1131.

Archives of Pediatrics, New York.

February.

57 *The Prognosis of Tuberculous Peritonitis in Children. G. A. Sutherland

58 *The Effects of Tight Diapers. A. C. Cotton.

59 Two Instructive Cases of Cerebral Pneumonia and Their Treatment. Louis Fischer.

60 *Pilocarpin in the Treatment of Scarlet Fever. E. W. Saunders.

61 A Case of Paroxysmal Hemoglobinuria in a Boy Four Years Old. Charles Herrman.

57. Tuberculous Peritonitis.—Sutherland finds that uncomplicated tuberculous peritonitis generally has a good prognosis, even when tuberculous pleurisy is present. It is less favorable when there is a strong family history of tuberculosis; an infancy passed under bad hygienic and dietetic conditions; a constitution of feeble resistant power or a history of severe infective illness in early life. Certain conditions or symptoms render it less favorable, such as continued pyrexia, rapid wasting, persistent diarrhea, rapid pulse, or recurrent acute exacerbations. It is also rendered less favorable in the presence of one or more of the following local complications: Tuberculous ulceration of the bowel; extensive caseation of the mesenteric lymph nodes, or of tuberculous masses; localized suppuration from infection through the lymph nodes or the intestine; obstructive symptoms from bands or matting of the intestine. It is bad in cases of rupture of the suppurating lymph node, or the perforation of an intestinal ulcer into the peritoneal cavity, in tuberculous meningitis and general miliary tuberculosis. In tuberculous peritonitis the prognosis is not appreciably affected by simple laparotomy.

58. Tight Diapers.—Cotton thinks the use of tight diapers on infants is likely to produce the justo minor pelvis in the adult and that much of this prevalent deformity is due to just this cause. He suggests some care as to this point and better hygienic clothing. The ideal protection would seem to be afforded by a large blanket of light, flexible, non-conducting material enveloping loosely the entire infant below the neck, but it is hard to keep him inside such a garment as this. He mentions a bag-like garment that is now in use in some of the hospitals of Chicago and other cities.

60. Pilocarpin in Scarlet Fever.—The use of this remedy in scarlet fever is advocated by Saunders, who finds its benefit is due to its effect on the salivary and muciparous glands, with the absence of all tendency to myocardial or neural degeneration and of pulmonary complications. In hyperpyrexia hydrotherapeutic measures are the first to be used, followed by the administration of pilocarpin; even at ordinary temperatures, such as 104, it is better to precede each dose by a thermolytic bath. The first dose should be watched for idiosyncrasy, and if this is present a hypodermic of atropin will prevent disagreeable consequences. Subsequent doses should be graduated according to the effect of the first and the height of the temperature. Toleration is rapidly established. A parched mouth, however, should never be allowed during the disease.

The Alienist and Neurologist, St. Louis.

February.

62 *Hemorrhagic Internal Pachymeningitis in the Insane. J. D. Courtney.

63 *The Neural and Psycho-neural Aspects of Surgical Practice. Charles H. Hughes

64 Simulation of Tabes Dorsalis. V. Krafft Ebling

65 Outlines of Psychiatry in Clinical Lectures. C. Wernicke

66 The Diatrop in Society. Charles H. Hughes

67 The Suggestive Treatment of Hysteria Gravis. V. Krafft Ebling

68 The Evolution of the Neuraxis. Charles H. Hughes.

62. Hemorrhagic Internal Pachymeningitis in the Insane.—Courtney finds this condition more or less pronounced in nearly 10 per cent. of all cases, and concludes that it is peculiarly associated with insanity, especially with paresis, alcoholism and dementia. It is twice as common in men as in women. It consists in hemorrhage and partial absorption and organization of the effused blood, forming a membrane.

63. Neurology and Surgery.—Hughes emphasizes the relations that exist between neurology and surgery, the actions of the neurons and attention to nutrition and conservation of these organs, also the psychiatric element in surgery. He thinks the surgeon should avoid all sources of psychic depression and consider the nervous symptoms of his patient before and after operation to ensure success. The possibilities of post operative insanity are noted.

Journal of Cutaneous Diseases, New York.

February.

69 *The Histogenesis of Scales and Crusts. R. Sabouraud

70 *Note on the Histology of Herpes Zoster. S. Pollitzer

71 *The Value of Radiotherapy in Cutaneous and Other Cancers. Charles W. Allen

69. Scales and Crusts.—In this article Sabouraud analyzes the origin of scales and crusts, which he finds is not exactly in accordance with popular notions, but he wishes to show that among the processes which go to make the scale of the usual histologic type, that is, the scale crust, the process of hyperkeratosis is a reactional phenomenon of the second order. The two processes which form this scale and thus crust are the exhalation at the surface of the skin of a serous "tide" and of a leucocytic "seum." These are the first two phenomena. As to the hyperkeratosis which covers the scale crust with a corneous layer, it is a secondary reaction of the epidermis to the exoserosis and exocytosis, once they are produced. These two phenomena of exoserosis and of exocytosis dominate the formation of the scale in general as well as all crusts, excepting only the simple pityriasis capitis and of ichthyosis, which are exclusively produced by hyperkeratosis.

70. Herpes Zoster.—Pollitzer's article gives an instance which proves the occurrence of a variety of herpes affecting the rete Malpighii or hair follicles exclusively, a type that has not been heretofore described.

71. Radiotherapy.—While recognizing that the x ray as a therapeutic measure is not a passing fad, Allen points out that its effect is at times to produce severe harmful symptoms referable to the heart, lungs and other internal organs, and absorption of disintegration products. Metastases may be encouraged and cancer itself may be produced in predisposed individuals. The method is not to be solely relied on in all cases of cancer. In the nodular, wart like and dry growths on the skin, other means of removal, preferably by arsenical paste, should first be employed and the rays may then be applied. The indiscriminate application of the ray to all forms of disease as practiced by unscrupulous advertisers and quacks and the deceit practiced by calling other rays by this name, are likely to bring discredit on a method really useful whose effect is at times almost magical but often most disappointing.

Cleveland Medical Journal.

February.

72 A Study of Tuberculosis in Cleveland. William T. Howard, Jr.

73 *The Frequency, Site and Course of Tuberculosis in Cleveland. John C. Darby and Henry P. Parker.

74 *On the Nativity of Decedents from Tuberculosis in Cleveland for the Years 1895 to 1901. Cullen F. Welty.

75 *On the Relation of Age, Sex and Conjugal Condition to Deaths from Tuberculosis. George W. Moorehouse.

76 *The Distribution of Tuberculosis in Cleveland. Wm. O. Osborn and Frederick C. Herrick.

77 Municipal Prophylaxis. Martin Friedrich.

73. Tuberculosis in Cleveland.—The statistics of the prevalence of tuberculosis in Cleveland, as shown by a record of 658 autopsies, are discussed by Darby and Parker, who conclude that their figures of 29.6 per cent. of definite tuberculosis at autopsy falls considerably below the true figure, and would include their 53½ per cent. of cases of apical adhesions, making a total of 35.5 per cent., or one-third of all autopsies showing tuberculous change. This they consider a very conservative estimate. Active tuberculous processes were found in practically one-half of all cases showing definite tuberculosis. In half of these cases it was the cause of death. Under 20 years of age active tuberculosis is almost always fatal, but later steadily decreases, so that death from tuberculosis is comparatively rare in persons over 60 years of age. The relative frequency of tuberculosis of the principal organs is, in order, as follows: lungs, bronchial glands, spleen, intestines, kidneys, liver and nervous system. The other portions of the body are rarely affected. The primary focus is almost invariably the lungs and occasionally the bronchial glands.

74. Nativity of Tuberculosis Cases in Cleveland.—Welty has analyzed over 3,000 deaths from this cause in Cleveland, and finds that only 730 of the individuals were born there; 1,203 were born elsewhere in the United States, and 1,306 foreign born. This gives 119 deaths to each 100,000 of the native-born population and 151 deaths to 100,000 of the foreign-born population, with a general mortality of 130 to each 100,000 of the total living population. He gives a comparative table from other sources of the deaths from tuberculosis in the various European countries, showing that the mortality from tuberculosis in those mentioned is in all cases higher than that of the Cleveland residents born in those countries. The Irish seem to have profited the least by change of residence and the Hungarians most.

75. Age, Sex and Conjugal Condition in Tuberculosis.—From a study of the Cleveland statistics in regard to these points, Moorehouse finds that the city furnished during the seven years from 1895 to 1901, inclusive, 8.7 per cent. of its total deaths from tuberculosis. It was the cause of 1.4 per cent. of deaths between the ages of 20 and 25 years and 2.6 per cent. of deaths between 20 and 30 years; 15.5 per cent. were from tuberculosis between 20 and 25; 30.3 per cent. between 20 and 30 years, and 50 per cent. between 23½ and 44 years; 4.9 per cent. of all male deaths were from this cause. The male deaths dominated over the female, in whom over 3.8 per cent. of all deaths were from tuberculosis. The greatest number of male deaths was found between the ages of 25 and 29, of females between 20 and 24. In proportion to the living population the greatest number of deaths occurred between 55 and 64 years. He does not find it easy to settle on the actual relations of marriage with liability to death from tuberculosis. The real relation that he finds exists between tuberculosis and marriage is that the condition under consideration has a very marked tendency to postpone or prevent individuals so affected from marrying.

76. Distribution of Tuberculosis.—The localities specially affected by tuberculosis in Cleveland are noted by Osborn and Herrick, who find that certain districts show much greater mortality than others, these occurring mostly in the older parts of the city, near the manufacturing and railroad districts and in those occupied by the laboring classes. They think it is due to the unsanitary conditions in which these people work and live; their ignorance or indifference to minor ailments, especially the early signs of tuberculosis. They do not find any considerable number of house infections.

Physician and Surgeon, Detroit, Mich.

November, 1902.

77½. *The Iliac Segment of the Ureter. Byron Robinson.

78. *Joys and Sorrows of an X-ray Worker. Henry Hulst.

79. *The Therapeutic Value of Echinacea in Septic Conditions. Frank D. Walsh.

77½. The Anatomy of the Ureter.—Robinson's article is an elaborately detailed anatomic description.

78. The X-Ray.—Hulst gives his experience with the use of the x-rays. He has found the induction coil most satis-

factory to him for instantaneous work, and he points out the importance of the operator doing all his work, even to the development of his plates, to get the best results.

79. Echinacea.—This drug is recommended by Walsh as a valuable remedy for blood deprivation and an active antagonist to septic changes. He has found it of value in puerperal septicemia and other septic conditions, in gangrene of the lung, etc. There are two preparations, the normal tincture and the "echafolta," the latter being the name given to a purified form of echinacea of a definite strength.

Proceedings of the Philadelphia County Medical Society.

January 31.

SYMPOSIUM ON LEPROSY.

80 A Case of Tubercular Leprosy. J. V. Shoemaker.

81 The Lepa Bacillus in the Circulating Blood. L. Napoleon Boston.

82 Observations on Leprosy occurring in Japan, Iceland and Norway. Judson Daland.

83 *Mouth Infection Due to Natural Teeth. D. D. Smith.

83. Mouth Infection.—Smith notices the particular increase of dental disease, which, he thinks, has much to do with the general health. The kidneys, he holds, are specially affected in pyorrhea, and he says that every mouth with teeth in the natural state untreated is constantly breathing out infection. The contention, therefore, over the surgeon's beard seems puerile. It would be better for antiseptic purposes if it was an absolutely complete mouth mask. He finds from his experimental work that caries is the result of environmental conditions. His method of treatment is complete removal of all concretions, calcic deposits, semisolids, bacterial plaques or inspissations of the teeth between them and the gum margin, and frequent polishing of the teeth by hand methods; not alone the more exposed labial and buccal surfaces, but the lingual, palatal and proximal surfaces, as well, of the mouth are thus treated. With this "mouthly prophylaxis" he has been able to stop decay and finds decided benefit in many conditions, such as general malaise, nervousness, nervous prostration, nervous dyspepsia, etc.

Colorado Medical Journal, Denver.

November, 1902.

84 *Delusions; Insane and Sane. Bernard Oettinger.

85 Fibroid of Right Broad Ligament. Edwin B. Shaw.

86 *The Influence of Biliary Acids on Surface Tension. C. D. Spivak.

87 The Cesarean Section, with Report of Three Cases. T. Mitchell Burns.

84.—See abstract in THE JOURNAL, XXXIX, p. 329.

86. Biliary Acids.—Spivak discusses the Hay test for bile acids in the urine, giving its history. He has applied this test to the study of bile acids in the feces and stomach contents. The more he studies it the more striking it seems. A pinch of flowers of sulphur thrown on water or bile-free urine will float for weeks on the surface. On the addition, however, of one drop of bile to a quart of water, it will at once sink to the bottom. The test is so different in its nature from all other known means of analysis and so extreme in its sensitiveness that it is almost miraculous. Acetic acid, alcohol, ether, chloroform, essence of turpentine, benzoin and its derivatives, phenol and its derivatives, and anilin also cause the sulphur to precipitate. All fluids with a surface tension above 50 dynes per centimeter do not allow sulphur to fall, and in all fluids with a tension less than 50 dynes the sulphur rapidly settles. Lycopodium has the same relation to fluids with a tension of 30 dynes as flowers of sulphur to fluids with a tension of 50 dynes. In his own experiments he has noted that the specific gravity of the fluid has no influence on the accuracy of the test, nor has the reaction of the fluid any effect on the test. The fluid must be clear for correct results and the urine free from bubbles. Urine examined immediately after it is voided gives, invariably, the reaction for bile. This annoyed him until he found that heat reduced surface tension, and it must, therefore, be cooled off. His experiments have not yet warranted him to make positive assertions, but he wishes to call attention to this test for bile acids, which, with its simplicity, accuracy, and sensitiveness, should have universal application.

Medical Fortnightly, St. Louis.*February 10.*

- 88 Enucleation of an Atrophic Eye, with Implantation of a Glass Globe into the Orbital Cavity—Reattachment of the Recti Muscles in Original Positions. J. E. Jennings.
- 89 Report of Cases Treated with Roentgen Rays. (Continued.) Wm. Allen Pusey.
- 90 Diseases of the Lungs and Pleura. (Gangrene of the Lungs.) Albert Abrams.

Virginia Medical Semi-Monthly, Richmond.*February 13.*

- 91 Morbid Processes Compared with Sanitary Measures. J. McFadden Gaston.
- 92 The Causes and Treatment of Hydronephrosis. J. Wesley Boyce.

American Practitioner and News, Louisville.*December 1, 1902.*

- 93 On the Prevention of Infectious Diseases. (Concluded.) E. J. Kemp.
- 94 The Most Practical Organization for the Medical Department of the United States Army in Active Service. (Continued.) Thomas Page Grant.
- 95 Hay Fever, Its Etiology and Treatment. Benjamin L. W. Floyd.

Medical Mirror, St. Louis.*February.*

- 96 Medicine. D. B. St. John Roosa.
- 97 Scabies. Thomas C. Letch.
- 98 A Case of Exhibitionism. William L. Robins.
- 99 A Successful Treatment of Rheumatism. H. H. Fletcher.
- 100 Memorial Address on Abel M. Phelps. F. Van Fleet.
- 101 Some Points in Ligation of Arteries. Robert H. M. Dawbarn.
- 102 The Unclean Cigar Cutter. C. L. Steenson.

Fort Wayne Medical Journal-Magazine.*February.*

- 103 Diseases Produced through the Rectal Reflexes. L. R. East.
- 104 The Pathology and Treatment of Senile Pneumonia. E. W. Knepper.

Western Medical Review, Lincoln, Neb.*February 16.*

- 105 Circulatory Changes a Factor in Kidney Disease. W. R. Lavender.
- 106 Suggestion and Autosuggestion. G. W. Shilder.
- 107 Inanition Fever in the Newly-born Child. F. A. Butler.
- 108 Management of the Lying-in Room. A. J. Clark.
- 109 Intranasal Sarcoma—Report of Three Cases. G. H. Bicknell.
- 110 The Best Suture in the Repair of Hernia. H. P. Hamilton.
- 111 My First Year's Work in Abdominal Surgery. H. H. Everett.
- 112 Operations on the Kidneys and for Ovarian Cyst. William F. Conwell.

Journal of Eye, Ear and Throat Diseases, Baltimore.*January-February.*

- 113 Complete Aniridia with Posterior Polar Cataracts, Complicated by High Myopia and Kphththalmos. Report of a Case. H. O. Reik.

Oklahoma Medical News-Journal, Oklahoma City.*February.*

- 114 Acute Appendicitis and Its Treatment. (To be continued.) John B. Deaver.
- 115 Some of the Principles which Should Govern Us in Fracture Therapy. Thomas H. Manley.
- 116 Vaseline Versus Hard Paraffin in Plastic Surgery. Dexter D. Ashley.
- 117 Infant Feeding. C. R. Day.
- 118 Cerebrospinal Meningitis. Harry A. Reese.
- 119 Dysentery. Walter Penquite.

Medical and Surgical Monitor, Indianapolis.

- 134 Complications and Sequelae of Pneumonia. Geo. D. Parkhurst.
- 135 Active Principles in the Treatment of Disease. E. S. Weston.

Pacific Medical Journal, San Francisco.*February.*

- 136 A Case of Complete Absence of the Vagina. Winslow Anderson.
- 137 The Nature and Treatment of Obstinate Vomiting. Alfred W. Perry.
- 138 Hip-Joint Amputation under Medullary Narcosis. A. W. Morton.
- 139 Masturbation in the Female. E. H. Smith.
- 140 The Ideals of Preventive Medicine. (To be continued.) Victor G. Veckl.

Medical Examiner and Practitioner, New York.*February.*

- 141 Some Observations on Medical Examinations. Daniel R. Brower.
- 142 Cutaneous Affections in Relation to Life Insurance Examinations. Joseph Zeisler.
- 143 Life Insurance Urinalysis, Its Importance, Its Present Extent, and How Its Scope Can Best Be Broadened. J. Allen Patton.
- 144 Symptomatology, Diagnosis and Prognosis in Stenotic Obstruction of the Large Intestine. Thomas H. Manley.
- 145 The Importance of Hyaline Casts in the Diagnosis and Prognosis of Renal Diseases. A. H. Defendorf.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.*February 21.*

- 1 *Adenoma and Adeno-carcinoma of the Rectum. Charles B. Ball.
- 2 The Conditions Which Modify the Characters of Inflammations of the Skin, and Their Influence on Treatment. H. Radcliffe Crocker.
- 3 *The Bacteriologic Diagnosis of Sewage Pollution of Shellfish. E. Klein.
- 4 A Note on Bossi's Dilator in Eclampsia. J. W. Ballantyne.
- 5 *Is Rupture of the Aortic Valve an Accident Under the Workmen's Compensation Act? Theodore Fisher.
- 6 A Note on the Therapeutic Value of Adrenalin. J. Gray Duncanson.
- 7 *A Note on Some Further Uses for Pleric Acid. F. Victor Milward.
- 8 Manson's Trocar and Cannula for the Treatment of Liver Abscess. Alexander Turnbull.

1. Adenoids of the Rectum.—Ball's first lecture describes simple, multiple and congenital adenoma. By the word adenoma, we understand a tumor largely composed of epithelial tissue such as found in the gland structure. If it is a simple surface development, we speak of it as simple adenoma. If it grows through the basement membrane, invades the submucosa and infiltrates the tissue outside, the case is one of infiltrated adenoma or adenocarcinoma, the true form of intestinal cancer. This penetration of the submucosa is a characteristic distinction between the malignant and benign forms of the growth. First the adenoma appears as a wart-like congestion on the mucous membrane, which soon becomes more and more prominent while its base is narrowed to a peduncle, which tends to elongate so that it may project into the anus. These are sometimes single, but often multiple, and they cover extensive tracts of the mucous membrane. In this connection Ball mentions the congenital type, for which he favors the

but when the oysters are laid down where they are actually flooded by crude sewage in their immediate neighborhood, the danger is considerable. Oysters, moreover, even when they imbibe the *Bacillus typhosus*, discard it again when placed in clean sea water after ten or fourteen days, while cockles retain it, and even become a culture ground for it. The three forms especially noted are the *Bacillus coli*, the *Bacillus enteritidis*, and the *Bacillus typhosus*. The characteristic distinctions of the three groups are noted. Though there are many other of the colon group which may appear, their relation to sewage and pollution is not sufficiently known and, therefore, they can not be used for diagnostic purposes as can the *Bacillus coli*. The tests of the colon or the Gartner or the typhosus group must be made to prove that they are characteristic of one or the other of these. When a microbe can only be described as a coliform microbe, it is of indeterminate value in making a definite diagnosis of sewage and other pollution. The presence of *Bacillus coli communis* in any material quantity is highly suggestive of sewage or excremental pollution. The typical *Bacillus coli* is not a natural inhabitant of the oyster. The methods of the tests are described. Klein also holds that the presence of spores of the *Bacillus (enteritidis) sporogones* alone, without the simultaneous presence of *Bacillus coli communis*, can not be held as sufficient proof that the oysters have been subjected to recent sewage pollution, but when they are found together the evidence is strong.

5. Rupture of the Aortic Valves.—The question as to whether rupture of an aortic valve is an accident coming under the English workmen's compensation act is discussed by Fisher, who notices the facts as shown in the pathologic literature and concludes that disease of the aortic valves may be the result of untreated syphilis or some other infection, but, of whatever cause, it seems clear that rupture of the aortic valve segment is, in the majority of cases, the result of the same disease as that which produces aneurism of the aorta.

7. Picric Acid.—Milward finds picric acid specially useful in some minor conditions other than burns. In slight eczematous conditions with "weeping" surface and in slight traumatic abrasions it may be useful. It is not advisable to use it in active inflammation, as it may confine microorganisms under the protective coating it produces. He mentions, among the affections where it is useful, paronychia affecting the roots of the nails, common in surgeons and practitioners, ingrowing toe nails, soft corns, intertrigo, etc. It is better than starch and zinc oxid for those conditions, as these latter are likely to form crusts in which pus may form. It does not seem to cause irritation of the tissues like other antiseptics.

The Lancet, London.

February 21

- 9 *The Conditions Which Modify the Characters of Inflammations of the Skin, and Their Influence on Treatment. H. Radcliffe Crocker
- 10 *Fibroids of the Uterus and Its Ligaments Considered from a Clinical and Surgical Standpoint. Alban H. G. Doran
- 11 *Some Thoughts and Observations Regarding Appendicitis, Especially When Appearing in Its Acutest Forms. J. A. MacDougall
- 12 *The History of the Discovery of Trypanosomes in Man. Robert W. Boyce, Ronald Ross and Charles S. Sherrington.
- 13 On the Permanent Cure of the Feeble Minded. Mrs. Ellen F. Pilsent
- 14 Aneurism of the Ascending Arch of the Aorta in a Small Boy: A Postmortem Surprise. Alfred C. Jordan
- 15 A Case of Hemophilia Illustrating the Value of Calcium Chloride as a Local Styptic. T. Wilson Parry.

9. Skin Inflammations.—Crocker notices the various forms of dermatitis, those from irritation, various trade eczemas, etc. As to the question whether eczema is parasitic, a blood dyscrasia or a neurosis, no absolute answer can be given. But when the process is started, pus cocci, either staphylococci or streptococci, are present and do modify the form of inflammation and, in a large number of these cases, we should realize this fact, and consider whether we must not attack these organisms to successfully treat the condition. He mentions pemphigus—especially neonatorum, fungating papillary growths, and considers seborrhea at considerable length. In conclusion, he mentions the local origin of certain general eruptions, especially pityriasis rosea, which is not infrequent, but is not usually

known except by the dermatologist. It generally consists first in a single patch, followed later by a widespread asymmetrical outbreak, which, after lasting for three or four weeks, gradually disappears. He has also seen similar local originations of psoriasis. The most feasible explanation is the invasion of the micro organism from without and the local multiplication or, perhaps, the formation of toxins internally, with absorption into the circulation and generalization from within outward. We should attempt to treat the diseases in their beginnings, to prevent their later extension.

10. Fibroids.—In this third lecture, Doran begins with the management of capsules. Usually there is little need for trimming, as the tissue usually shrinks. Vessels have to be secured on the inner or parametric surface. As to the question whether they can be let alone or drained, there is some difference of opinion. He is inclined to hold that drainage is oftener necessary than some authorities would recognize when the capsule is deep. There are objections, but the practice is underrated at the present time, as it was formerly overrated and abused. He is not an enthusiast for it, but simply wishes to speak of its advisability in certain cases. Adhesions are rare in uterine fibroids, and seem to be sometimes connected with previous operative interference. He says it is important, however, to remember their infrequency. Small uterine adhesions in case of large ovarian cyst are a distinct source of danger. In case of dense adhesion of the ileum it is often better to resect an adherent piece of the intestine. Intestinal adhesions to malignant ovarian tumors are especially perilous, but they are rare in uterine fibroid disease. This fact should be considered in estimating the risks of hysterectomy. There is the possibility of adhesion of the extraperitoneal part of the large intestine to the surface of the tumor, which burrows under and behind the pelvic peritoneum, as in case of rectal adhesions. This is not always easy to recognize, and longitudinal bands may be taken for the ureter or may be taken for strands of fibrous tissue belonging to the tumor. After dividing the pelvic peritoneum, too rapid or rough use of the sponge or the finger may result in damage to the rectum, and that portion of the intestine has been known to be torn by too energetic pulling up of the tumor out of the pelvis. Parietal adhesions are very rare, for what appears to be such are more likely to be a direct connection between the abdominal parietes and the tumor. The fibroid burrows under the anterior layer of the mesometrium. Adhesions of fat omentum associated with a big omental epiplocele are very dangerous. The possibility of post-operative ileus and of rupture or hernia of the abdominal wound are considered and instances given. He thinks there are no reliable statistics on this subject, but that the more experienced operators have the least trouble. Still, no one can be sure of avoiding it. The possibility of cancer of the stump and the management of it is discussed at length. He notices, particularly, the discussion in the American Gynecological Society on the advantages of complete and partial hysterectomy as regards the retention of more or less of the stump of the cervix. He asks, may not any method of operating devised to maintain the nutrition of the stump favor the development of cancer, such, for example, as preservation of the ovaries, etc.; but admits we have not facts to answer this question. In conclusion he speaks of the danger of pushing a fibroid out of the pelvis, which is especially dangerous during pregnancy.

11. Appendicitis.—MacDougall first notices the comparative rarity of appendicitis in former years and its frequency at the present time, and gives statistical data in support of this latter assumption. He is inclined to consider the disease an increasing one, and its severity is becoming greater. The increased frequency of relapse is another point of interest. As a rule the acuter the initial symptoms the greater the gravity of the case. He lays special stress on the character of the pulse rather than its rapidity. A quick small pulse, with a high, or worse still, with a low temperature, should attract immediate attention and the pulse and the temperature should be closely watched. Sometimes a normal temperature with

quickening pulse may tell the true story. A pulse of 120 should be regarded as a very ominous sign. He also cautions against regarding the "period of repose" which may occur and may lead to serious error. It is possible to misread the phenomena that indicate lethal appendicitis, striking as they are. Colic of the appendix is one confusing condition, and he gives an instance. Renal and hepatic colic have proven sources of error, and intestinal obstruction may appear to be the condition when real ultra-acute appendicitis exists. Disease of the right adnexa is also noted here. The cecum itself may give cause to symptoms which we may credit to the appendix. He has no present knowledge of the simulation of lethal appendicitis by gastric or duodenal ulcer or twisting of the pedicle of an ovarian cyst, but records show how strong the counterfeit may be. Text-books say little about the difficulty of differentiating between appendicitis and typhoid fever, though it is a notable problem. A condition difficult of explanation yet not of recognition, occurring in many abdominal troubles, may, when appearing with the appendix as its exciting cause, lead us astray, that is peritonism. It is extraordinarily like peritonitis, and yet the importance and the gravity of the one are occasionally only mimicked by the other. The lack of tenderness of the swollen abdomen is one differentiating point, and often there is a certain quickness of pulse and rise of temperature; the freedom with which the patient moves and breathes and the expression of the face also suggest deception. A basal pleurisy or pneumonia involving, as they are apt to do, the pleural surface of the diaphragm, may lead to symptoms that suggest acute peritoneal inflammation. As regards treatment, he has not much to say. He thinks opium should be avoided, but it may be absolutely necessary. It is better given by suppository or rectal injection than as morphin subcutaneously. Enemas rather than aperients by the mouth should be used if needed. Early operation is safest. He would make an incision closer to the anterior superior spine of the ileum than is usually advised. It is quite possible to display and remove the appendix without any protrusion of the small intestine, and in cleansing and drainage of the inflammatory area and its surroundings he has more belief in the use of sponges and swabs than in irrigation, and in large sized drainage tubes with gauze wicks than in gauze packing. He bears testimony to the extreme value of normal saline solution subcutaneously in septic conditions.

12. Trypanosoma in Man.—Priority in the discovery of trypanosoma in man is discussed by Boyce, Ross and Sherrington, who conclude that, whatever the claims of others may be, it was certainly Dr. J. S. Dutton (Thompson-Yates Laboratory Reports, 1902) who first established the existence of trypanosomes in human beings in a thoroughly scientific manner.

Australasian Medical Gazette, Sydney.

January 20.

- 16 An Examination of Morphia Tablets—Are They Reliable? C. Reissmann.
- 17 The Incidence, Symptoms and Treatment of Strangulated Hernia in the Aged. Charles MacLaurin.
- 18 Hydroperitoneum in Pelvic Disease. Fourness Barrington.
- 19 A Case of Ruptured Uterus. W. B. Vance.
- 20 Notes on Anesthesia in Abdominal Surgery. F. J. T. Sawkins.
- 21 Notes on Two Cases of Death from Ether Anesthesia. Sydney Jamieson.
- 22 Anglo-sarcoma of Thigh, Simulating Hip Disease. Leonard W. Bickle.

Intercolonial Medical Journal of Australasia, Melbourne.

January 20.

- 23 Presidential Address, Medical Society of Victoria. J. P. Ryan.
- 24 Achondroplasia. A. Jeffreys Wood and H. M. Hewlett.
- 25 Ulcer of the Stomach Near the Pylorus—Pylorotomy—Recovery. R. A. Stirling.

Annales de Dermatologie et de Syph., Paris.

- 26 (III, 12.) *Le traitement intense et précoce de la syphilis par les injections intraveineuses de sublimé. Tommasoli.
- 27 *Les purpuras et leurs modalités cliniques d'après leur formule sanguine. E. Lenoble.
- 28 Traitement local des syphilides ulcéreuses par l'application permanente de compresses imprégnées d'une solution de sublimé au 1/5000. Hallopeau.
- 29 *Le technique de la photothérapie à Copenhague. L'appareil de Finsen-Reyn. Leredde.
- 30 (IV, 1.) *Etude cytologique du liquide céphalo-rachidien (cerebrospinal fluid) chez les syphilitiques. P. Ravaut.
- 31 Porokératose papillomateuse palmaire et plantaire. C. Mantoux.

32 *Le traitement mercuriel intensif. Suppression des frictions mercurielles dans le traitement des syphilis graves. Leredde.

26. Abortion of Syphilis by Intravenous Mercurial Injections.—Tommasoli has been using the intravenous route during the last seven years for the abortion of syphilis, instead of using it as others have recommended, merely as a last resort. He has thus treated 44 patients, restricting this method of treatment to cases in which the initial syphiloma was diagnosed beyond question, and in which the infection had been contracted less than forty-five days previously. The longer the interval since infection the more energetic the treatment required. He commences with 6 to 8 mg. of sublimé and pushes it rapidly to 14, 16 or 18 mg., repeating the injections nearly every day, and supplementing them with the usual frictions, intramuscular injections of sublimé, calomel or pills of protoiodid, with brief intervals of suspension of all specific treatment or change to potassium iodid. The strictest hygiene of the mouth and frequent use of potassium chlorate, sodium borate and alum was always successful in curing the slight tendency to salivation observed in a few instances after the first injections. General weakness was occasionally noticed during the course of treatment, and this he combated by hygienic measures and administration of a tonic containing iron, arsenic, phosphorus, manganese and strychnin. Out of the total of 44 30 were completely cured of their syphilis, not a trace of secondary manifestations having been observed since. In 6 others he was equally successful, but was not able to follow the cases as long as he wished and consequently does not include them in his 30 cases of complete cure. The drawbacks of the method are the occasional painful lumps at the point of the injection, or slight suffusion of blood, phlebitis, subcutaneous edema or erythem. None of these local inconveniences were serious, and they were all due to imperfect technique, not to the method, and are easily avoided. Another drawback is the metallic taste in the mouth and the salivation. Both were rare and not severe. No stomatitis was observed in any instance. Other drawbacks are a slight degree of general muscular weakness, slight headache, slight fever, very rarely, a general malaise and stomach troubles. None of these inconveniences were serious enough to require suspension of the treatment, and all soon vanished under appropriate accessory measures. No thrombosis, embolism or coagulation was noticed after any of the intravenous injections. His experience justifies the conclusions that intravenous injection of sublimé is harmless, even with the dose of 2 cg. Commenced promptly in the primary period and continued as energetically as possible, followed by a course of the ordinary mercurial treatment during several months, it will positively abort syphilis in a proportion of 80 per cent. of all cases. He describes the details of his 44 cases. Some received 15 injections, others 20, 23 in 37 days, or 32 in 43 days. The total of sublimé injected ranged from a few cg. to 17; 28.1 and 31.6 cg. The cases in which this intensive treatment failed illustrate the time limits for its effectiveness. In a young man of 19 the injections were commenced 31 days after infection. Twenty-five injections were made in 29 days, and then 8 more after a brief interval. The total injected was 210 mg. with an average of 6 mg. at each injection. Larger doses induced headache. No secondary manifestations have developed, although several years have elapsed, and no supplementary mercurial treatment was attempted in this case. The syphiloma usually vanished with the sixth to eighth injection.

27. The Blood in Purpura.—Lenoble asserts that purpura is a myeloid affection, distinguished by the absence of retraction of the clot and of transudation of serum, by the constant myeloid reaction, sometimes intense, characterized by the profound changes in the hematoblasts, which are diminished in number but increased in size, with a more or less complete loss of specific spontaneous alterability, and of their tendency to cling together. The majority are precipitated. Thus is explained the absence of retraction of the clot, the special anemia and the profuse hemorrhages characteristic of this affection, which he calls the disease of the bone marrow *par excellence*. It resembles myelogenic leukemia and also pernicious anemia,

but differs from them as all the blood-forming organs are involved in them. Every petechial eruption, with or without hemorrhagic manifestations, is true purpura when the formula of the blood is of the above character. Every purpuric exanthem, with or without hemorrhagic manifestations, but with normally constituted blood, is an affection extraneous to the blood-forming organs. The attenuated myelocytic reaction is not alone specific, but becomes so when accompanied by a normoblastic reaction, however slight.

29. Technic of Phototherapy.—Leredde extols the exalted scientific conscientiousness which distinguishes all of Finsen's writings. He has recently visited Copenhagen and announces that Finsen has now thoroughly established that the intensity of the superficial reactions is no criterion of the deep reactions. Comparative tests of the penetrating power of the various lamps employed in phototherapy, show that all are far inferior to Finsen's apparatus, although theoretically improvements on it. The tests are made with a plate of photographic paper on which are placed the superposed ears of rabbits. Through two rabbit ears the Finsen apparatus affects the paper in 5 seconds, the Lortet and Genoud apparatus in 20, while the Bang lamp requires 5 minutes to produce the same effect. Through 3 rabbit ears the Finsen requires 20 seconds and the Lortet apparatus 4 minutes. Through 4 ears the Finsen requires 2 minutes, while the Lortet apparatus fails to affect the paper at any time. The consequences of these tests are extremely important. They show that phototherapy requires foci concentrating on a limited spot a large quantity of violet rays, that is, great luminous intensity. Finsen and Reyn have constructed a lamp for application of the light treatment to a single patient. The lamp regulates itself automatically; has a force of 20 amperes and 55 volts and requires a direct and continuous 100-volt current.

30. Cytodiagnostic of Syphilis.—Ravaut has found that the cerebrospinal fluid is liable to contain cellular elements, reflecting the intensity of the reactions in the meninges which have been noted in syphilitic affections of the nervous system. In many cases the cerebrospinal fluid disclosed the presence of the cellular elements long before any clinical manifestations were apparent. This allowed energetic mercurial treatment to be instituted, which warded off the impending serious complication. They are more numerous in the fluid when the lesion is in its early stage, and become attenuated as they become cicatrized.

32. Intensive Mercurial Treatment.—Leredde proclaims that we have no reason for continuing to cling to mercurial frictions in the treatment of syphilis. Before the introduction of insoluble injections they were the best means known and were generally more active than mercury by the gastric route. But now they should be abandoned without regret. The only means of knowing the exact amount of mercury we are introducing into the system is by injecting it. Injections are to-day the only mode of mercurial treatment which allows us to realize what may be called an intensive mercurial treatment. There need be no fear of stomatitis if the mouth has been put in perfect order. The dose for an adult man, free from any special susceptibility to mercury or renal trouble, may be .02 to .035 of mercury daily, in the form of the benzoate or biniodid. By careful supervision of temperature, weight, digestive tract and the urine, it is soon possible to determine the largest dose that can be taken without disturbance. The dose of .02 was always well tolerated by his adult patients, and he accepts this as the minimum amount for intensive treatment, but it must be individualized for each patient.

Berliner Klin. Wochenschrift, Berlin.

- 33 (XL, 1.) Operation ohne directen Gebrauch der Finger (without direct use of fingers). König.
- 34 Untersuchungen über die Durchgängigkeit der jugendlichen Magen-Darimwand (permeability of wall of youthful gastrointestinal canal). Disse.
- 35 Ueber Syphilis-Immunität, besonders in Hinsicht auf die sogen. Profeta'schen Gesetz (law). Von Düring.
- 36 Tuberkulöse Kehlkopfgeschwülste (laryngeal tumors). L. Neufeld.
- 37 Zur Symptomatologie und Therapie der perforativen Peritonitis bei Ulcus ventriculi. F. Weber.

- 38 Ueber Antistreptokokken-Serum bei Scharlach (In scarlet fever). P. Moser.
- 39 Ibid. A. Ingalsky.
- 40 Ibid. H. Aronson.
- 41 (No. 2.) Ueber die Wirkung des Sauerstoffs (action of oxygen) auf die osmotische Spannung (tension) des Blutes. A. Loewy.
- 42 Untersuchungen über die im Rachen befindlichen Eingangs-pforten (research in regard to portals of entry in throat) der Tuberculose. S. Ito.
- 43 Ueber den Milch-Sterilisierungs-Apparat von Dr. E. Kobrak (Disadvantages of). L. Natanson.
- 44 (No. 3.) Familiäres Vorkommen congen. Herzfehler (heart defects), zugleich ein Beitrag zur Diagnose der Persistenz des Ductus arteriosus Botalli. de la Camp.
- 45 Ueber Quecksilber-Blindung (blinding of mercury) im Urin. A. Laqueur.
- 46 Ueber Harnröhrenfistel und Krebs (urethral fistula and cancer). L. Lipman-Wulf.
- 47 (No. 4.) Zur Etiologie osteoarthropathischer Veränderungen (changes). W. Jereut.
- 48 Ueber den Alcohol als Arzneimittel (in therapeutics) gemäss den Ergebnissen der Forschungen des letzten Jahrzehnts (by light of latest researches). C. Binz. (Commenced in No. 3.)
- 49 Zur Kenntniss der Cobra-Gift (venom) activirenden Substanzen. P. Kyes and H. Sachs.
- 50 (No. 5.) Ueber den Werth der otitischen Symptome zur Diagnose von Kopfverletzungen (injuries of head), bezw. Basis-Fractur. Stenger.
- 51 Casulistische Beiträge zur Kenntniss der "Tabes incipiens." G. Flatau.
- 52 Der Kampf gegen die Tuberculose als Volkskrankheit (campaign against Tub. as a disease of the masses). J. Katz.
- 53 Ueber atypische Typhen (typhoid). C. A. Ewald. (Commenced in No. 4.)
- 54 (No. 6.) Rigidity dorsalis myopathica. H. Senator.
- 55 Ueber Akkomodations-Lähmungen (paralyses). J. Helbron.
- 56 Beiträge zur conservat. Chirurgie. M. Katzenstein.
- 57 Theoretisches und Praktisches über lokale Wärmeapplication. H. Davidsohn.

35. Non-Existence of Inherited Immunity to Syphilis.—In his extensive experience in Asia Minor, where syphilis is almost endemic, Von Düring has become more and more firmly convinced that the descendants of syphilitics are entirely lacking in any special resistance to fresh infection, but acquire it like other persons free from any hereditary taint. He mentions as an instance that in a certain secluded village 110 of the 160 inhabitants had syphilis, and 30 children, including 25 between 7 and 12 years old, bore evidences of recently-acquired syphilis. The disease was introduced into this region early in the last century, and as 30 to 200 on an average in each village are syphilitic, the third and fourth generation would certainly exhibit some degree of immunity if such a thing as an inherited immunity were possible. But the children in these families acquire syphilis the same as the children in other families free from syphilitic antecedents.

38-40. Serum Treatment of Scarlet Fever.—These articles are claims for priority in certain discoveries in regard to serum treatment of scarlet fever, Båginsky maintaining Aronson's claims against Moser.

41. Action of Oxygen on Osmotic Tension.—Loewy found in his tests that the freezing-point of the blood has a tendency to rise on inhalation of oxygen. This he establishes is not due directly to the oxygen, but is merely the result of the deeper breathing induced by the inhalations. The better ventilation of the lungs, therefore, is the main factor in the benefit derived from inhalation of oxygen, in his opinion.

42. Entering Points for Tuberculosis in the Throat.—Ito examined under the microscope the tonsils, uvula, etc., of 104 cadavers. Not a single case of certain primary tuberculosis was found among them, and secondary lesions were noted in only 6.

48. Alcohol in Therapeutics.—Binz asserts that the growing tendency to refrain from the use of alcohol in therapeutics costs the life of many a patient who might have been saved by the judicious administration of some good alcoholicum in threatening collapse or inanition. Clinical experience harmonizes in every point with the results of the later scientific researches on the subject.

50. Otitic Symptoms in Case of Injuries of Head.—Stenger's experience has demonstrated that if functional tests of the hearing result positively, they afford reliable evidence as to the severity of the traumatic injury and exclude simulation. A peripheral trauma may affect the cerebrum, but the symptoms differ from those observed in case of concussion of the brain with simultaneous injury of the organ of hearing.

into it. The receptacle is then rinsed and filled with fresh saline fluid and the irrigation resumed. The injection must not disturb the patient in any way. The urine frequently amounts to 5 or 6 quarts in the twenty-four hours. He allows a quart of the saline solution to each injection, and prolongs the time to about an hour, interrupting the flow occasionally to avoid inducing peristalsis or desires. The injection is repeated every hour or two. If a peristaltic movement does occur it is not felt as a desire after the first. The fluid in the receptacle merely rises a little, showing that the pressure in the intestine is a little augmented. He describes some typical examples to illustrate the great benefit derived from the procedure, which he recommends as a notable improvement over infusion or any other method of supplying the necessary fluid to the organism in acute infectious diseases. He usually makes about ten injections in all.

SS. Inhalation and Disinfecting Apparatus.—Saenger's apparatus is described and illustrated. Its chief advantage is that the spray is directed in a very powerful jet, which much facilitates the action of the disinfectant.

Zeitschrift f. Orthopaedische Chirurgie, Stuttgart.

- 92 (XI, 2.) *Ueber die unblutige operative Epiphyseolyse zur Behandlung des Genu valgum adolescentium. C. Reiner.
- 93 Ueber die statische Verhältnisse des Oberschenkelknochens (static relations of femur). C. Ghillini and S. Canavazzi.
- 94 Noch einmal die Zuppinger'sche Skoliosentheorie. H. Zuppinger.
- 95 *Zur orthopaedisch-chirurgischen Behandlung der schlaffen Lähmungen (lax paralysis) der unteren Extremitäten (legs). A. Möller.
- 96 Ueber Unterschiede (variations) in der Form der Skoliosen bei Männlichen und Weiblichen Individuen (in male and female individuals). A. Sutter.
- 97 Zur Casuistik der beiderseitigen (bilateral) congenit. Schulterblatt-hochstandes (elevation of scapula). H. Mohr.
- 98 *Study of Anatomic Processes in Healing of Congenital Hip Dislocation After Bloodless Reposition. D. Müller—Anat. Vorgänge bei der Heilung der angeb. Hüftluxation durch unblutige Reposition. Meine Resultate dieser Behandlung.
- 99 Zur Kenntniss der Skoliose bei Thieren (in animals). E. Schmidt.
- 100 *Troubles of the Middle and Front Portion of Foot and Their Treatment. K. Hasebroek.—Ueber Mittel-Vorderfussbeschwerden und deren Behandlung.
- 101 Zur Pathogenese der kindlichen Skoliose. C. Deutschländer.
- 102 Report of Orthopedic Institute at Dresden. A. Schanz.—Anstaltsbericht.
- 103 Fall von congenitaler Skoliose. H. Maass.
- 104 Ueber den "congenitalen" Schiefhals (torticollis). Ibid.
- 105 Fall von multiplen congenitalen Contracturen mit Muskel-Defecten. F. Magnus.

92. Bloodless Epiphyseolysis for Genu Valgum.—Reiner is assistant at Lorenz's Universitäts-Ambulatorium for orthopedic surgery at Vienna. He reviews the history and experiences of epiphyseolysis in the treatment of genu valgum adolescentium, and proclaims that it is by far the simplest, easiest and most rational method of overcoming this deformity. The epiphysis heals smoothly almost without exception, and without inflicting any permanent injury. Quite recently Codivilla published a series of 1,031 cases thus treated at Milan and Bologna, and the only complication observed in any case was paralysis of the peroneus nerve, which occurred in 34, but proved briefly transient in 32. It was permanent in only 2 instances, and was probably due to defective technic in applying the cast. The epiphysis had been detached smoothly as the radiograms showed, with or without circumscribed fracture of the diaphysis. The functions of the epiphysis were not disturbed in any way. Reiner restricts the intervention to subjects over 8 and under 17. Within these age limits he has been invariably successful. The apparatus which he uses screws like a vise to the operating table and holds the limb firm, while he works the leg as a lever. The resistance to be overcome is least at the epiphysis, and especially at the knee. The operation is done in profound narcosis. The construction of the apparatus can be seen from the cuts. An important point is the slope of 20 degrees from the horizontal, and also the groove large enough to admit the finger of the operator. The epiphysis is found 1 to 1.5 cm. above the greatest prominence of the inner condyle, and it is placed exactly on the groove. The forefinger of the left hand is kept in the groove during the entire intervention, with the middle finger on the median surface of the knee. The right hand holds the other side of the knee joint. The operator stands with the leg on his right.

The force applied must be rapid and regularly increasing, not jerky. It is unnecessary and unwise to attempt to complete the operation at the first attempt. After exerting the regular force with hands, forearms and elbows, the operator should give up and start afresh, but never removing his hands or the fingers from their places. The slightest displacement of the thigh on the block should be corrected at once. The maneuver

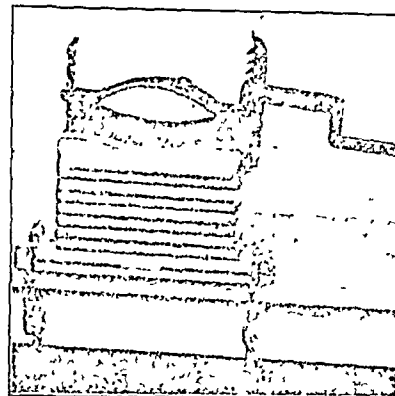


Figure 1.

is repeated as often as necessary until the desired result is attained. In many cases it is accomplished at the first attempt. It is indispensable that the condition of the epiphysis should be determined by radiography in persons approaching the age limit. Some of his patients were able to flex the knee without pain as early as three to five days after the intervention.

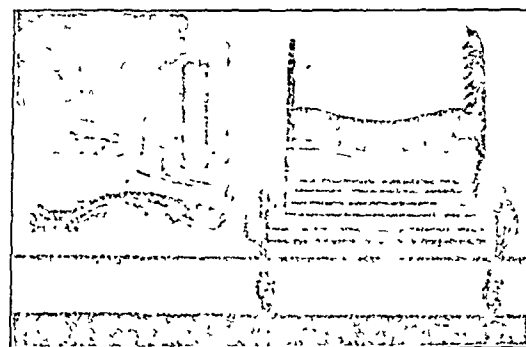


Figure 2.

The subcutaneous hematoma and the pains are always trivial. The cast applied is worn for five to seven weeks. Epiphyseolysis attacks the deformity at its culminating point and reduces the functional shortening to the least possible minimum. The after-treatment is shorter than after other interventions for correction of this deformity. It does not interfere with

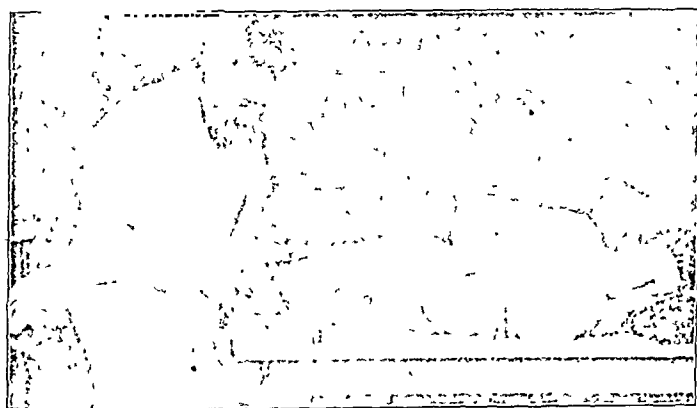


Figure 3.

the later development of the extremity. He gives radiographs of several typical cases, and describes the anatomic findings in his experiments on the cadaver.

95. Treatment of Lax Paralysis of the Legs.—Möller recommends a walking cast, such as Krause applies in cases of fracture of the leg. The limb is placed in it in over-

correction. The child can begin to walk in it after two days. The cast is taken off in four to six weeks, the position of the leg corrected, and a cast applied again, while a supporting apparatus is made. It answers the purpose merely of retention and substitution. As the child has already been walking in its cast, the supporting Hessian apparatus causes no disturbance. If the physician wishes to dispense with an apparatus by transplantation of tendons, the conditions are the most favorable possible at this stage. The muscles have been strengthened by use in the cast, and even arthrodesis is more readily done. Four children, treated on these principles, were able to walk with a chair or cane two to five days after application of the cast, while before that the extensive paralysis of both legs had rendered any attempt to walk or stand impossible. Two other children with almost total paralysis, and two others with paralytic clubfoot were treated in the same way, and the results have been surprisingly satisfactory.

98. Anatomic Conditions After Bloodless Reduction of Congenital Dislocation of Hip.—Müller gives illustrations of lengthwise sections of two hip joints from children whom he had treated by bloodless reduction a few months and two years before. One had died from meningitis and one from pneumonia. The conditions in the hip treated two years before were almost ideally physiologic. The head of the femur rested in a cavity resembling the normal acetabulum, and enclosing more than two-fifths of a circle. The roof was broad and thick, but, as it consisted almost entirely of cartilage, in radioscopic examinations the conditions did not appear as perfect as they were in reality. The two cases emphasize the importance of the conditions in the capsule in regard to the ultimate outcome. The large recess in the capsule, in which the head formerly rested, is empty after reposition, but, on account of its elasticity, the capsule retracts and, by the pressure of the surrounding parts, folds down on the head of the femur, clinging closely to the latter and holding it in its new place. The capsule continues to shrink and the folds gradually become smoothed out until, in time, the capsule stretches smoothly and normally from its attachment to the acetabulum to its insertion in the neck. This must occur very early, as in one of the joints described, examined only six and one-half weeks after reposition, the capsule was stretched so taut that even after removal of the bandages the head remained in the acetabulum, at least while the child lay in bed and was carried. If weight had been borne on the limb and adduction had occurred, the capsule would probably not have been strong enough to stand the pressure. This can be counted on after three or four months, which, therefore, Müller accepts as the minimum interval before removing the cast. The capsule now holds the head in place and, by exercising its functions, the joint gradually builds up the bony and cartilaginous formations, which restore conditions in the joint to the nearly normal state seen in the first of the specimens he illustrates. These formations certainly have some beginning while the limb is in the cast, especially at the cartilaginous rim of the acetabulum on its anterior and upper margin. The constant pressure of the capsule transforms, even at this early date, the shape of the cavity from a plate more to that of a cup. The strong tension of the anterior wall of the capsule obtained by the vigorous abduction has a twofold purpose: it tilts the edge of the acetabulum, and also presses the head into its cavity, neither of which could be accomplished by the cast alone. Atrophy of the capsule from long disuse excludes this important factor in the cure and, hence, it is advisable to wait patiently quite a long time if treatment fails, before renewing the attempt. His experience includes 40 cases of unilateral luxation, and 70 per cent. have been completely cured. He attributes his success to his practice of applying the cast down to the ankle in pronounced abduction and outward rotation, with the knee stretched. This best insures the retention of the head in the acetabulum. In several cases the cavity was so shallow that success seemed absolutely impossible, but treatment on these lines has resulted in permanent correction of the luxation. The results in bilateral luxation have not been so favorable. Only 5 of the children have been

permanently cured. He ascribes the failures to the fact that at first he included subjects really too old for this method of treatment, and also to his former practice of treating both joints at one sitting, by which he lost the beneficial effect of functional use of the joint. No time is gained in the end, and many advantages are thrown away by attempting to treat both hips at once. Massage or other after-treatment is not necessary for young children. He concludes with the remark that many of the failures in the unsuccessful cases were due to the lack of intelligence on the part of the parents, or else the cases date from the earliest days of the method. He thinks he can safely say that in by far the largest majority of cases it is possible to obtain complete cure by bloodless reposition.

100. Treatment of Subjective Troubles of the Middle and Front Foot.—Hasebroek refers to the pains and other disturbances in the articulation between the astragalus and calcaneus and the navicular and cuboid bones, and between the navicular and the three cuneiform bones. Also in the articulation between the cuboid and cuneiform bones and the metatarsal bones. He considers the pains in these joints, with the bones intact, an affection *sui generis*. The disturbances in the first articulation resemble the pains of flat-foot, but they are undoubtedly due to some slight and forgotten traumatic injury, to some local rheumatic or gouty process, or to an actual neurosis of the joint. Many cases of supposed flat-foot unmistakably belong in this category, especially those that do better without the flat-foot support. Treatment should be massage and gymnastics of the joint, with treatment of the underlying cause, if possible. A support for the joint may also be necessary, a celluloid insole. He recommends his patients to buy their shoes ready-made at a large establishment, instead of having them made to order, subject to the whims of some conceited shoemaker. Mild rheumatic affections recover most rapidly; the gouty or senile cases are more obstinate, and the neuroses are sometimes rebellious. In prophylaxis, a supporting insole will be found effective in preventing the tendency of the foot to turn over. Children whose ankles turn and who, thus, are unable to skate, will sometimes be completely cured by the supporting insole. This turning over of the foot is liable to cause injury of the joint and the wearing of the insoles may prevent the above disturbances later. The disturbances in the other articulation, the "Lisfranc joint," include stiffness, with a tendency to plantar flexion and turning in of the front portion of the foot. The pains are localized more between the great and second toes and are accompanied by callous growths under the ball of the great, second and third toes. Hasebroek thinks that the anatomic structure of the forefoot in relation to the middle foot and arch is responsible for the development of corns and callosities more than the footgear. Treatment of disturbances in this point should include massage and gymnastics, supplemented by raising the forefoot by an appropriate insole. It should rise gently and supply a slight flat expanse for the front part of the foot. The relief is immediate. The footgear should be long enough and allow plenty of room. These insoles should be used whenever a tendency to callous growths at these points is observed. They may avert trouble later.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

DISEASES OF THE SKIN: Their Description, Pathology, Diagnosis and Treatment, with Special Reference to the Skin Eruptions of Children, and an Analysis of 15,000 Cases of Skin Disease. By H. Radcliffe-Crocker, M.D. (Lond.), F.R.C.P., Physician for Diseases of the Skin in University College Hospital. Third Edition, Revised and Enlarged. With Four Plates and 112 Illustrations. Cloth. Pp. 1466. Price, \$5.00. Philadelphia: P. Blakiston's Son & Co. 1903.

HARRINGTON'S HYGIENE. A Manual of Practical Hygiene for Students, Physicians and Health Officers. By Charles Harrington, M.D., Assistant Professor of Hygiene in the Medical School of Harvard University. Second Edition. Revised and Enlarged. With

113 Engravings and 12 Full-page Plates in Colors and Monochrome. Cloth. Pp. 755. Price, \$4.25 net. Philadelphia and New York: Lea Brothers & Co.

THE DIAGNOSIS AND MODERN TREATMENT OF PULMONARY CONSUMPTION, with Special Reference to the Early Recognition and the Permanent Arrest of the Disease. By Arthur Latham, M.A., M.D. Oxon., M.A., Cantab., Author of the Prize Essay on the Erection of His Majesty's Sanatorium. Cloth. Pp. 215. Price, \$1.50 net. New York: Wm. Wood & Co. 1903.

DISEASES OF WOMEN. A Clinical Guide to Their Diagnosis and Treatment. By George Ernest Herman, M.B. Lond., F.R.C.P., Obstetric Physician to and Lecturer on Midwifery at the London Hospital. With Upwards of 250 Illustrations. Revised Edition. Cloth. Pp. 884. Price, \$5.00 net. New York: Wm. Wood & Co. 1903.

INDEX-CATALOGUE OF MEDICAL AND VETERINARY ZOOLOGY. Part 2. (Authors: B to Buxton.) By Ch. Wardell Stiles, Ph.D., Consulting Zoologist of Bureau of Animal Industry, and Albert Hassall, M.R.C.V.S., Acting Assistant Zoologist of Bureau of Animal Industry. Paper. Pp. 198. Washington: Government Printing Office. 1903.

A TEXT-BOOK OF PRACTICAL MEDICINE. For the Use of Students and Practitioners. By William Gilman Thompson, M.D., Professor of Medicine in Cornell University Medical College. Second Edition, Thoroughly Revised. With 62 Illustrations. Cloth. Pp. 1104. Price, \$5.00. Philadelphia and New York: Lea Brothers & Co.

THE INTERNAL SECRETIONS AND THE PRINCIPLES OF MEDICINE. By Charles E. de M. Sajous, M.D., Fellow of the College of Physicians of Philadelphia. Volume I. With 42 Illustrations. Cloth. Pp. 800. Price, \$6.00. Philadelphia: F. A. Davis Co. 1903.

QUARTERLY PUBLICATIONS OF THE AMERICAN STATISTICAL ASSOCIATION. I. The Vital Statistics of the Census of 1900. By Frederick L. Hoffman. Paper. Pp. 202. Boston: J. P. Shulz. 1902.

REPORT OF MINISTER OF AGRICULTURE for the Dominion of Canada for the Year Ended Oct. 31, 1902. Printed by Order of Parliament. Paper. Pp. 284. Ottawa: S. E. Dawson. 1903.

PUBLICATIONS OF THE MISSISSIPPI HISTORICAL SOCIETY. Edited by Franklin L. Riley, Secretary. Vol. VI. Cloth. Pp. 567. Oxford, Miss.: Printed for the Society. 1902.

REPORT OF THE COMMISSIONER OF EDUCATION for the Year 1900-1901. Volume I. Cloth. Pp. 1216. Washington: Government Printing Office. 1902.

The Public Service.

Army Changes.

Movements of officers of the Medical Department, U. S. Army, under orders from the Adjutant-General's Office, Washington, D. C., from Feb. 7 to 20, 1903:

Brown, Justus M., colonel and assistant surgeon-general, U. S. A., at his own request, under the provisions of the Act of Congress approved June 30, 1882, has been retired by the President from active service, Feb. 13, 1903, he having served more than forty years.

McCallum, Francis M., contract surgeon, U. S. A., in addition to his present duties at Indianapolis Arsenal, is assigned to duty as examiner of recruits at Indianapolis, and will report in person accordingly to Major James E. Macklin, Eleventh Infantry, recruiting officer at that place.

Agramonte, Aristides, contract surgeon, now at Havana, Cuba, will report in person to the commanding officer, Cabana Barracks, for temporary duty and by letter to the commanding general, Department of the East.

De Shon, George D., captain and asst.-surgeon, having reported his arrival at San Francisco, in compliance with orders heretofore issued, will proceed to Boston and assume the duties of attending surgeon and examiner of recruits in that city. Captain De Shon will report by letter to the commanding general, Department of the East.

O'Neill, Joseph A., contract surgeon, U. S. A., is ordered to report in person not later than Feb. 16, 1903, to the commanding officer First Battalion, Fourteenth Infantry, at Fort Brady, Mich., for duty to accompany that battalion to the Philippine Islands, and on arrival at Manila to report in person to the commanding general, Division of the Philippines, for assignment to duty.

Winn, Robert N., first lieut. and asst.-surgeon, U. S. A., is relieved from further duty at Fort Riley, Kan., and will proceed to Fort Grant, Ariz., and report in person to the commanding officer of the latter post for duty and by letter to the commanding general, Department of the Colorado.

Navy Changes.

Changes in the Medical Corps of the Navy, for the week ending Feb. 28, 1903:

Surgeon J. G. Field, detached from duty with recruiting party, and ordered to the *Bennington*.

A. A. Surgeon G. G. Hart, ordered to duty with recruiting party.

Surgeon J. W. Ross, appointed medical director from Feb. 3, 1903.

A. A. Surgeon J. C. DeVries, appointed acting asst.-surgeon, Feb. 16, 1903.

Surgeon E. H. Marsteller, ordered to the *Panther* via the *Raleigh*. Medical Director A. F. Price, detached from the Naval Hospital, Washington, D. C., and ordered to the navy yard, New York.

Surgeon G. B. Wilson, detached from the *Panther* and ordered to the Naval Hospital, Chelsea, Mass.

Surgeon C. F. Stokes, detached from the *Oregon* and ordered home to wait orders.

Asst.-Surgeon B. L. Wright, detached from treatment at the Army General Hospital, Fort Bayard, N. M., and ordered to the Naval Hospital, Pensacola, Fla., for treatment.

A. A. Surgeon L. H. Schwerin, ordered to duty with recruiting party No. 4.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Feb. 26, 1903:

Asst.-Surgeon J. W. Kerr, to report at Bureau for special temporary duty.

Asst.-Surgeon B. S. Warren, granted extension of leave of absence, on account of sickness, for thirty days from March 1.

A. A. Surgeon M. H. Ross, relieved from duty at Cairo, Ill., and directed to proceed to Los Angeles, Cal., and report to medical officer in command for duty.

A. A. Surgeon F. F. Sams, granted extension of leave of absence, on account of sickness, for thirty days from February 17.

Pharmacist S. W. Richardson, granted leave of absence for seven days from Feb. 21, 1903, under provisions of Paragraph 210 of the regulations.

Pharmacist E. J. Thurston, to report to chairman of board for physical examination to determine fitness for promotion to the grade of pharmacist of the first class.

Pharmacist G. A. Morris, granted extension of leave of absence for seven days from February 18.

BOARD CONVENED.

Board convened at the Bureau, Washington, D. C., Feb. 25, 1903, for the physical examination of Pharmacist E. J. Thurston, of the second class, to determine his fitness for promotion to the grade of pharmacist of the first class. Detail for the board: Assistant Surgeon-General W. J. Pettus, chairman; Assistant Surgeon-General H. D. Geddings, recorder.

REINSTATEMENT.

E. J. Thurston, reinstated and appointed pharmacist of the second class.

CASUALTY.

A. A. Surgeon C. F. Ulrich, died Feb. 17, 1903.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Feb. 28, 1903:

SMALLPOX—UNITED STATES.

California: Los Angeles, Feb. 7-14, 3 cases; Sacramento, Feb. 7-14, 2 cases; San Francisco, Feb. 8-15, 2 cases.

Florida: Jacksonville, Feb. 14-21, 3 cases.

Georgia: Atlanta, Dec. 31-Feb. 18, 64 cases, 4 deaths.

Indiana: Elwood, Feb. 15-22, 6 cases; Evansville, Feb. 14-21, 6 cases; South Bend, Feb. 14-21, 2 cases.

Iowa: Des Moines, Jan. 1-31, 10 cases.

Kansas: Wichita, Feb. 7-14, 1 case.

Kentucky: Lexington, Feb. 14-21, 3 cases.

Maine: Biddeford, Feb. 14-21, 4 cases.

Maryland: Baltimore, Feb. 14-21, 1 case.

Massachusetts: Boston, Feb. 14-21, 10 cases; New Bedford, Feb. 24, 1 case.

Michigan: Detroit, Feb. 14-21, 20 cases; Grand Rapids, Feb. 14-21, 14 cases; Marquette, Feb. 7-21, 10 cases; Menominee, Feb. 7-14, 1 case; Port Huron, Feb. 14-21, 8 cases.

Missouri: St. Louis, Feb. 8-22, 26 cases.

Nebraska: Omaha, Feb. 7-14, 3 cases.

New Hampshire: Manchester, Feb. 14-21, 2 cases.

New Jersey: Camden, Feb. 14-21, 9 cases.

New York: Feb. 14-21, Buffalo, 1 case; New York, 3 cases.

Ohio: Cincinnati, Feb. 13-20, 20 cases; Cleveland, Feb. 14-21, 6 cases, 2 deaths; Dayton, Feb. 14-21, 7 cases.

Pennsylvania: Erie, Feb. 14-21, 7 cases; Johnstown, Feb. 14-21, 1 case; McKeesport, Feb. 14-21, 2 cases; Philadelphia, Feb. 14-21, 25 cases, 6 deaths; Pittsburgh, Feb. 7-14, 12 cases, 3 deaths; Reading, Feb. 16-23, 1 case.

South Carolina: Charleston, Feb. 14-21, 3 cases; Greenville, Feb. 7-14, 2 cases.

Tennessee: Feb. 14-21, Memphis, 2 cases; Nashville, 1 case.

Utah: Salt Lake City, Feb. 7-14, 20 cases.

Washington: Tacoma, Feb. 9-16, 1 case.

Wisconsin: Green Bay, Feb. 15-22, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, Jan. 24-31, 5 cases.

Belgium: Jan. 24-31, Antwerp, 8 cases, 1 death; Brussels, 4 deaths.

Germany: Hamburg, Jan. 31-Feb. 7, 3 cases.

Great Britain: Birmingham, Jan. 24-Feb. 7, 14 cases, 1 death; Dublin, Jan. 31-Feb. 7, 2 cases; Leith, Jan. 24-31, 2 cases; Liverpool, to Jan. 31, 176 cases, 18 deaths; London, Jan. 31-Feb. 7, 4 cases; Manchester, Jan. 31-Feb. 7, 36 cases; Nottingham, Jan. 31-Feb. 7, 4 cases; Sheffield, Jan. 24-Feb. 7, 5 cases, 1 death; Sunderland, Jan. 17-24, 1 death.

India: Bombay, Jan. 20-27, 14 deaths; Calcutta, Jan. 17-24, 2 deaths.

Russia: Odessa, Jan. 11-18, 2 cases; St. Petersburg, Jan. 24-31, 88 cases, 20 deaths; Warsaw, Jan. 3-17, 7 deaths; Warsaw, Jan. 24-31, 2 deaths.

Spain: Corunna, Jan. 31-Feb. 7, 1 death.

Uruguay: Montevideo, Dec. 1, 1902-Jan. 7, 1903, 9 cases, 2 deaths.

YELLOW FEVER.

Mexico: Vera Cruz, Feb. 7-14, 4 cases.

PLAGUE—INSULAR.

Hawaii: Honolulu, Feb. 12, 1 death.

PLAGUE—FOREIGN.

India: Bombay, Jan. 20-27, 455 deaths; Calcutta, Jan. 17-24, 76 deaths; Karachi, Jan. 11-26, 54 cases, 41 deaths.

Mexico: Mazatlan, Jan. 17-24, 51 cases, 27 deaths.

CHOLERA—FOREIGN.

India: Bombay, Jan. 20-27, 1 death; Calcutta, Jan. 17-24, 48 deaths.

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Original Articles.

OBSERVATIONS ON THE MECHANICS OF DIGESTION.*

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The results which are to be presented in outline in this paper have been obtained in researches carried on in 1897-98 and in 1901 in the Laboratory of Physiology of the Harvard Medical School, and they are part of an extensive investigation into the mechanical factors of digestion to be carried on during the next few years. The method thus far pursued has been that of mixing with the food subnitrate of bismuth, a harmless, almost inert, powder, opaque to the x -rays, and then with the fluorescent screen observing the changes in the shadows of the alimentary contents as they are worked on by the muscles of the digestive organs. The clearness with which masses of food can be seen is indicated in Figure 1, a radiograph of a cat. Observations have been made chiefly on cats, but many of these observations have been confirmed on dogs, rats and guinea-pigs, as well as on the human subject. The results of the work on the movement of food in the esophagus,¹ on the movements of the stomach² and on the movements of the intestines³ have already appeared. In this paper I shall review briefly some of the results already published on the activities of the stomach and intestines and report certain new observations.

The mechanical factors in digestion perform three functions: the propulsion of the food through the alimentary canal, the mixing of the food with the digestive juices and the exposure of the digested food to the absorbing mucous membrane. These functions are performed in different ways in different parts of the alimentary tract. For the sake of clearness, the methods and results of the activities of the stomach will first be considered, and later those of the large and small intestines.

When the stomach is observed according to the method above mentioned, it is seen to consist of two physiologically distinct parts, divided about half way between the cardia and the beginning of the antrum (Fig. 2). To the left of this division lies the cardiac portion or fundus of the stomach; to the right is the pyloric portion. The distinction between these two portions arises

from a difference in muscular activity. Over the food in the pyloric portion waves of constriction are repeatedly passing. These waves start at the beginning of this division of the stomach and pass as deepening contraction rings to the pylorus. In the cat six of these waves pass a given point in a minute, in the white rat, also, about six waves per minute, in the dog between four and five, and in the guinea-pig seven. The fundus is characterized by a total absence of peristalsis; as the food is pressed out of the pyloric portion, however, by the repeated constrictions, the muscles of the fundus slowly contract and squeeze the contents into the more active division. Since the stomach is an organ more devoted to digestion than to absorption, the mechanical processes of mixing the food with the digestive juices and of propelling the food into the intestines are here of first importance.

The efficiency of the gastric peristalsis as a means of mixing the food with the gastric secretions depends on the contraction of the pyloric sphincter. Careful observation reveals that the pylorus does not open for every wave of constriction which approaches it, but only at irregular intervals. So long as the sphincter holds tightly, each ring of constriction as it courses from the middle to the end of the stomach presses the food into a blind pouch; the food, unable to escape through the pyloric opening, has as its only outlet the opening in the advancing ring. Thus each peristaltic constriction in moving toward the pylorus has all the contents of the pyloric portion streaming back through the contracted ring. Beaumont, in his famous researches on Alexis St. Martin, declared that the gastric contents circulated first along the greater curvature from cardia to pylorus, then back along the lesser curvature. He gave, however, very meager evidence to support this statement. Brinton, for theoretical reasons, believed that the food must move forward along the sides of the stomach and backward through the middle. The value of the circulation of the food, as described by these men, lay in the supposition that the food was thus brought near to the secreting gastric wall and that the gastric secretion could thereby more readily exert its action. Observations made with the x -rays do not support these theories of mixing currents running throughout the stomach, but nevertheless they show that the pyloric portion is an admirable device for bringing all the food under the influence of the glandular secretions of that region.

Little paste pellets of bismuth subnitrate with starch enough to keep the form may be distinguished from the remainder of the stomach contents by the darker shadows which they cast. Several times I have been fortunate in seeing two of these pellets about a centimeter apart in the axis of the stomach. As a constriction wave ap-

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. Alfred Stengel, L. Hektoen and Winfield S. Hall.

1. Cannon and Moser: American Journal of Physiology, 1898, 1, p. 435.

2. Cannon: *Ibid.*, 1898, 1, p. 359.

3. Cannon: *Ibid.*, 1901, vi, p. 251.

proached them, both moved forward, but not so rapidly as the wave. When the constriction overtook the first ball, the ball moved backward through the constricted ring in the direction of least resistance. The wave then overtook the second ball and this also passed backward to join its fellow. At the approach of the next wave they were both pushed forward once more, only to be again forced backward, one at a time, through the narrow orifice. As the waves recurred in their persistent rhythm the balls were seen to be making progress, an oscillating progress, toward the pylorus; for they went forward each time a little farther than they returned. Sometimes twelve minutes elapsed before the balls had advanced to the pylorus from the place where they were first

thus past the mouths of the glands—a food stream sweeping in one direction past an ever-refreshed mucous surface moving in the opposite direction. The result of this ingenious mechanism is that every part of the secreting surface of the pyloric portion is brought near to every bit of food before the latter leaves the stomach, it may be seventy times or more, as shown by the moving balls.

The propelling function in the stomach is subserved by these same waves of constriction whenever the pylorus relaxes. Relaxation of the pylorus occurs at irregular intervals and is due to factors as yet little understood. Curiously, it allows carbohydrate food, on which the stomach does not act, to pass onward into the intestine much sooner than it releases a proteid food which the stomach can digest. Hard particles, when brought by the peristaltic waves to the pyloric sphincter, act as a mechanical stimulus and greatly prolong the periods of its contraction. Under these circumstances over and

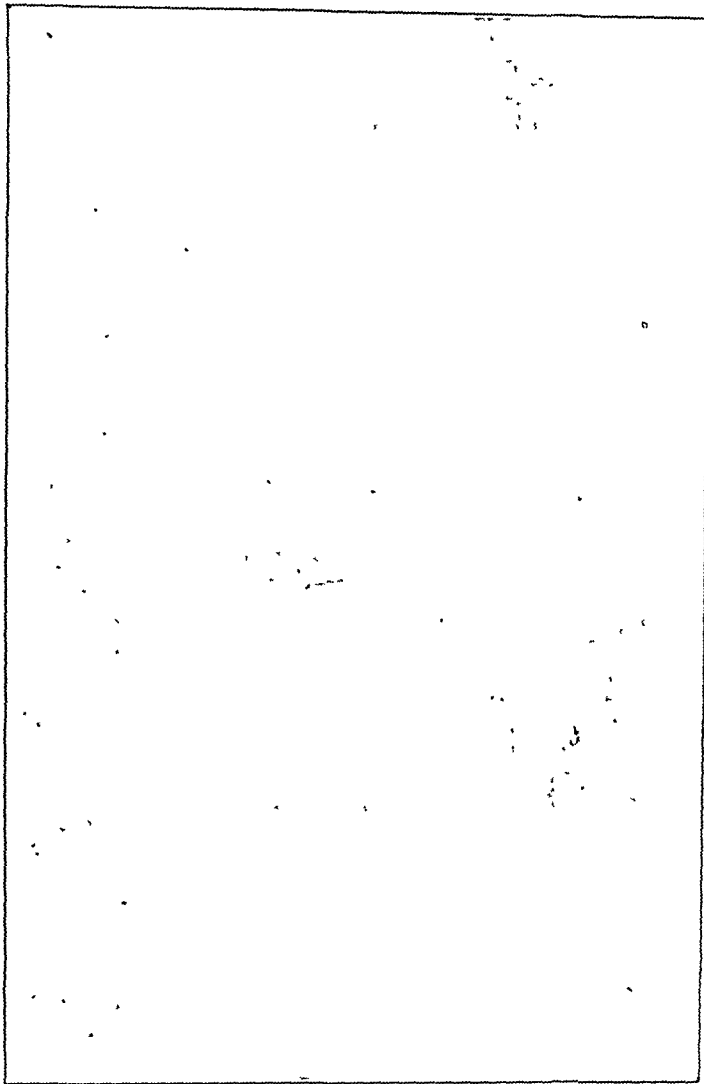


Fig. 1.—Radiograph of a cat's abdomen, taken 5 1/4 hours after eating. Spinal column in middle line with pelvis below. On right, above, the pyloric end of stomach; on left, dimly outlined by gas, the ascending colon, and the cecum containing small amount of food. Loops of small intestine containing food in various parts of the abdomen.

affected by the waves; since the waves were running at the rate of six per minute, these little pieces of food were moved back and forth on their way to the pylorus more than seventy times.

The significance of the motions of these food particles is made clear when the conditions attending the formation and passing of a peristaltic wave are considered. As a constriction occurs, the secreting surface enclosed by the narrowed muscular ring is brought close around the food lying within the ring. As this constriction passes on fresh areas of glandular tissue are continuously pressed inward about the narrow orifice; and, furthermore, as this constriction passes on, a thin stream of food is continually forced back through the orifice and

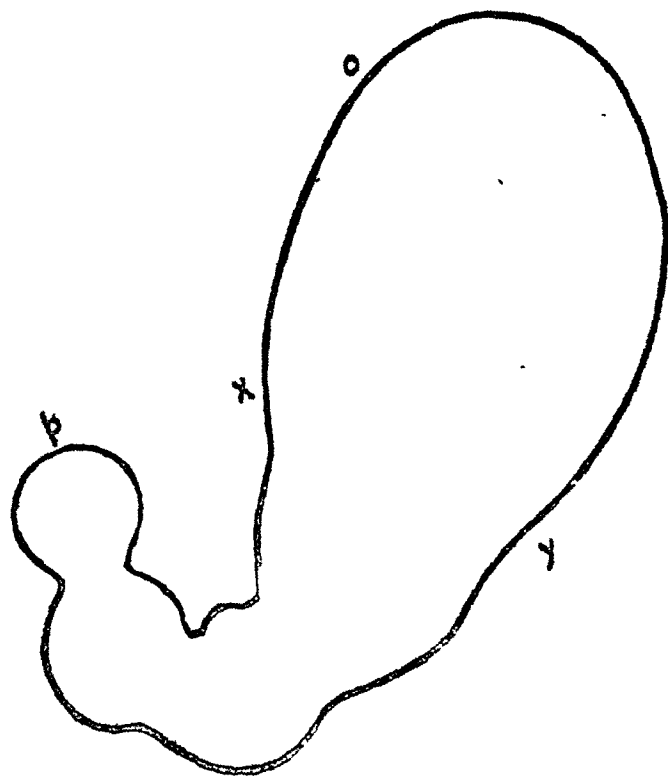


Fig. 2.—Outline tracing from radiograph of cat's stomach. *x-y*, Line of division between cardiac and pyloric portions; cardiac portion, with even contour, pyloric portion with waves of constriction passing to the pylorus (*p*); *o*, position of the esophageal opening.

over again the hard particle is swept up to the pylorus, only to shoot back through the advancing ring of constriction. By this repeated rubbing the peristaltic waves of the stomach serve to break up the more solid parts of the food, a function which the teeth perform with manifestly greater efficiency. It may be that the prevalence of pathologic conditions in the pyloric part of the stomach rather than in the fundus is due to injuries which the greater activity of the pyloric part must bring on itself.

The fundus of the stomach, as stated above, is characterized by a slow tonic constriction of its musculature, which forces its contents into the more active pyloric portion. Pellets of subnitrate of bismuth in this part of the stomach contents retain their relative positions for an hour or more after the food is ingested. In 1898 I presented evidence that the absence of mixing currents in the fundus results in the food there retaining its original reaction for a considerable period, so that salivary digestion may readily take place in that part of the stomach without interference by the acid gastric secre-

about the middle of each segment. As these new constrictions deepen, the first constrictions begin to relax. Finally, when the new constrictions have completely divided the segments, the first constrictions have entirely relaxed and the neighboring halves of the divided segments unite to form new segments in the region of the first constriction. Now these new segments are again divided by circular constrictions about their middle, and neighboring halves of these divided segments unite to make a third series, and so on. This process of rhythmic segmentation of the food may go on for several minutes in the duodenum (at the rate of thirty divisions per minute in the cat) so that the food, coming from the stomach, becomes thoroughly mixed with the outpouring secretions of the liver and the pancreas. It is usual for the process to be brought to an abrupt end in the duodenum by active peristalsis. A peristaltic wave forms behind the mass of food and sweeps it swiftly forward through several coils of the intestine.

When an animal has received a meal of bread and milk or salmon the characteristic appearance of the alimentary organs is as follows: over the pyloric end of the stomach constriction waves are continually passing.

per minute—a most remarkable activity for smooth muscle.

The result of the process of rhythmic segmentation must be a thorough mixing of the food with the digestive secretions brought from the stomach and the duodenum and with the secretions of the intestine itself, and a thorough exposure of the digested food to the absorbing walls—since, with each constriction, the absorbing mucous membrane is plunged directly into the midst of the little masses of food. Not only are the processes of digestion and absorption favored by these movements, for Mall has shown that contraction of the intestinal wall has the effect of forcing the venous blood from the submucous plexus into the radicles of the superior mesenteric vein, and has noted that it must have a similar effect on the flow of the lymph. Thus by this single mechanism of segmentation the food and digestive fluids are churned together, the absorbing mucosa is brought in most intimate contact with the digested food, and the blood and lymph, carrying the absorbed material, are sent away through veins and lacteals.

A review of the activities of the small intestine shows that the functions of mixing the food with the digestive

juices and exposing the food to the absorbing structures is performed by the process of rhythmic segmentation. The function of propelling the food along the canal may also be performed to a very slight extent by this same process; it is performed typically, however, by the well-known peristaltic wave which has so long been regarded as the chief activity of the intestinal muscles.

There are two matters of practical importance which remain to be mentioned: the effect of anti-peristalsis of the colon on rectal injections, and the effect of emotional states on the activities of the alimentary canal. About

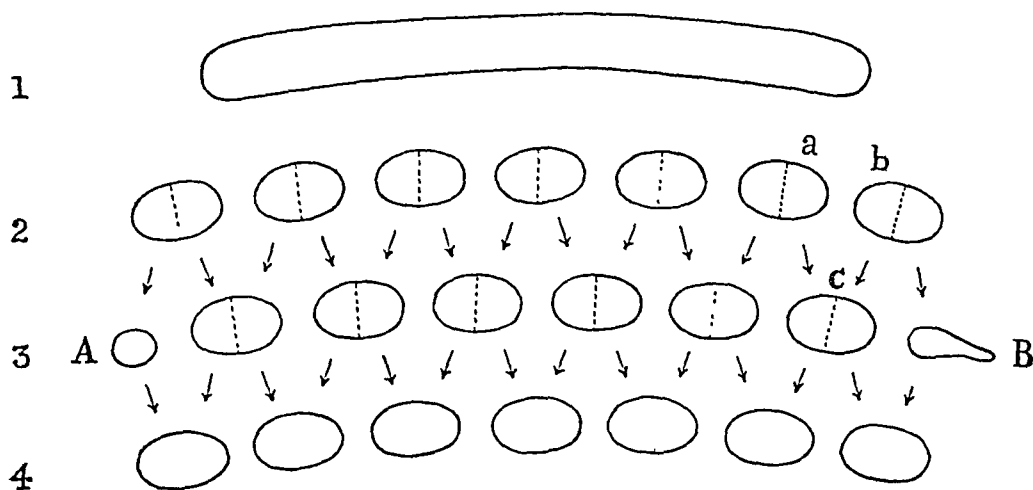


Fig. 4.—Diagram representing the process of rhythmic segmentation of the contents of the small intestine. Constrictions cut the mass into a series of uniform ovoid segments; a moment later each segment is divided into two parts, and immediately after the division neighboring parts, as *a* and *b*, line 2, rush together and merge to form new segments, as *c*. The next moment these new segments are divided to form a third series, and so on for a thousand times or more.

tion. These results have recently been confirmed by Heyde⁴ working in Grützner's laboratory in Tübingen.

The value of the stomach as a place for holding the bulk of the food and serving it out a little at a time so that the intestines may not become congested during their digestive and absorptive processes has been pointed out by Moritz. All the advantages secured thus to the intestines may be claimed also for the stomach itself, for, as has been shown, the active portion of the stomach is the pyloric portion, and the fundus serves as its reservoir—an active reservoir pressing out its contents a

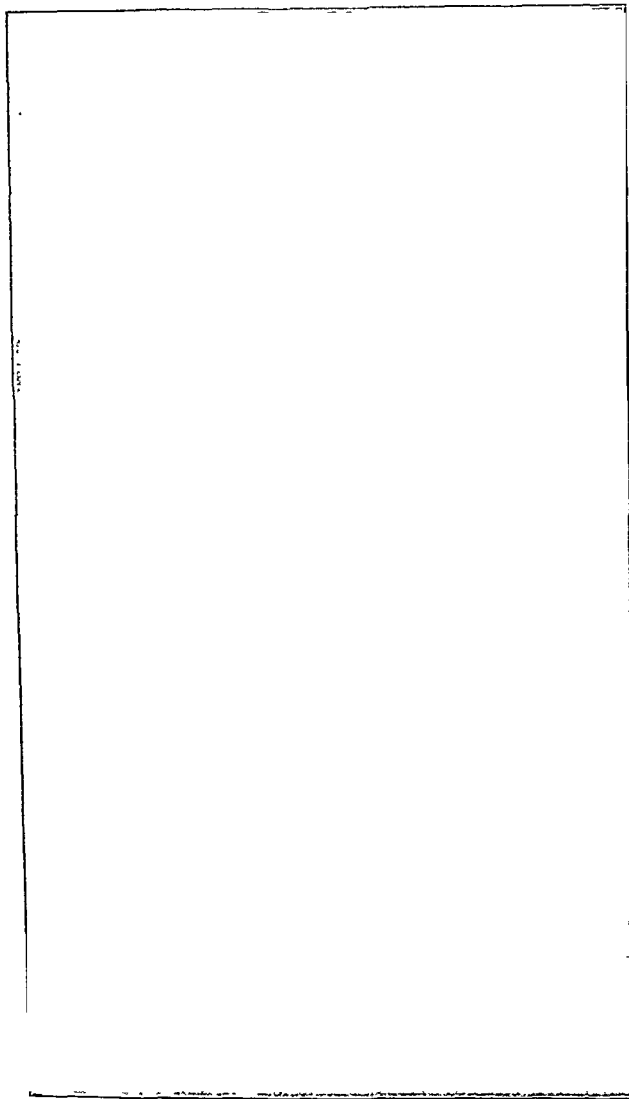


Fig. 3.—Radiograph showing region of persistent rings of contraction (descending colon), and region of antiperistalsis (cecum, ascending and transverse colon). The slight indentation above the cecum marks the position of the ileocolic valve.

little at a time as the pyloric peristaltic mechanism is ready to receive them.

I have described in detail the effects of peristaltic waves in bringing the food into intimate contact with the mucous surface of the stomach, because the action is similar to that in the cecum and in the ascending and transverse colon, where the normal activity is an antiperistalsis. Constriction waves start in the transverse colon and pass backward toward the cecum. These waves, unlike those of the stomach, do not run in continuous rhythm; they occur usually in periods lasting

about five minutes and recur every fifteen or twenty minutes.

The antiperistalsis in this part of the large intestine seems indeed to give a reason for the presence of a valvular structure at the entrance of the small intestine into the large. Hundreds of antiperistaltic waves have been seen coursing toward the cecum, and only twice has food been observed to be pressed back into the ileum through the ileocolic valve. Inasmuch as the valve is competent for the food which has gone from the small into the large intestine, the antiperistaltic waves have the same effect here as the peristaltic waves have in the stomach when the pylorus remains closed. For, when a constriction occurs, some of the mucous surface of the colon becomes enclosed by the narrowed muscular ring; and, as this constriction passes on, fresh areas of this surface are continually pressed inward around the narrow orifice, while a thin stream of food is passing by it in the opposite direction. As waves recur about five times a minute, twenty-five waves or more affect every particle of food in the cecum and in the ascending colon in this churning manner during each normal period of antiperistalsis. The result must be again a thorough mixing of the contents with the digestive secretions brought from the small intestine and an exposure of the digested food to the absorbing wall.

Immediately after food passes from the ileum into the large intestine a strong tonic contraction of the cecum and the ascending colon is commonly observed, which serves to press onward toward the rectum the contents of these parts. Antiperistaltic waves follow at once the general contraction, so that much of the food which has been pressed onward is returned into the cecum. With the repetition of this process, however, more and more material appears at the end of the transverse colon, and on its appearance there a persistent ring of contraction cuts it off from the region of antiperistalsis; as still more food appears in the large intestine this ring moves slowly onward toward the rectum, pressing a mass before it, and is followed by other similar rings carrying onward similar masses by very slow peristalsis (Fig. 3).

Thus, in the large intestine the function of mixing the food with the digestive secretions and of exposing this food to the absorbing walls is performed by an antiperistalsis at the beginning of the large intestine. It is here that the last valuable constituents of the food are worked over and taken into the body. The remnant of unused material is propelled onward by occasional strong contractions of the whole region of antiperistalsis. These contractions squeeze the material toward the end of the transverse colon where slowly-moving peristaltic waves force it to the rectum.

The manner in which the food is mixed with the digestive secretions, exposed to the absorbing wall, and carried forward in the small intestine is considerably different from the processes observed in the large intestine and in the stomach. To the admirable process by which these functions are performed in the small intestine I have given the name "rhythmic segmentation." This activity of the muscular wall is first seen in the duodenum when a mass of food has accumulated there after repeated relaxations of the pylorus. The mass of food is observed at first to be wholly quiet (Fig. 4). Suddenly irregular movements take place about it, and then at regular intervals along its length constrictions of the circular musculature separate the mass into a number of segments of equal size. Hardly have the constrictions thus taken place when similar constrictions begin to appear

4. Grützner: Deutsche Medizin-Zeitung, 1902, No. 28.

about the middle of each segment. As these new constrictions deepen, the first constrictions begin to relax. Finally, when the new constrictions have completely divided the segments, the first constrictions have entirely relaxed and the neighboring halves of the divided segments unite to form new segments in the region of the first constriction. Now these new segments are again divided by circular constrictions about their middle, and neighboring halves of these divided segments unite to make a third series, and so on. This process of rhythmic segmentation of the food may go on for several minutes in the duodenum (at the rate of thirty divisions per minute in the cat) so that the food, coming from the stomach, becomes thoroughly mixed with the outpouring secretions of the liver and the pancreas. It is usual for the process to be brought to an abrupt end in the duodenum by active peristalsis. A peristaltic wave forms behind the mass of food and sweeps it swiftly forward through several coils of the intestine.

When an animal has received a meal of bread and milk or salmon the characteristic appearance of the alimentary organs is as follows: over the pyloric end of the stomach constriction waves are continually passing.

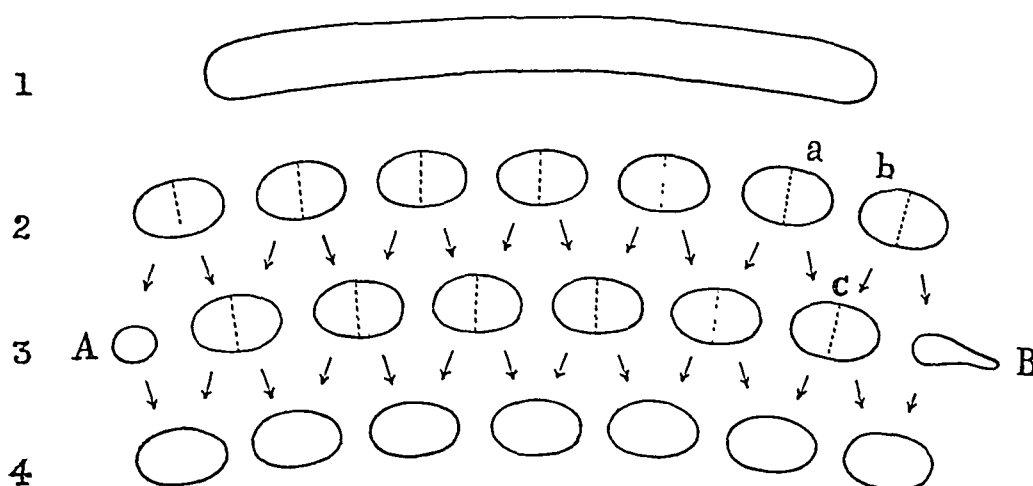


Fig. 4.—Diagram representing the process of rhythmic segmentation of the contents of the small intestine. Constrictions cut the mass into a series of uniform ovoid segments; a moment later each segment is divided into two parts, and immediately after the division neighboring parts, as *a* and *b*, line 2, rush together and merge to form new segments, as *c*. The next moment these new segments are divided to form a third series, and so on for a thousand times or more.

Along the cecum and the ascending colon an occasional series of antiperistaltic waves is to be seen, and in the small intestine a mass of food here and there is undergoing rhythmic kneading. The quiescence of the food in the intestines is in marked contrast to the continuous churning which it is receiving in the stomach. The food lies in scattered, long, slender masses in the ileum; only a few of these masses show any signs of muscular activity affecting them. When segmentation begins on one of these masses it follows the same course as that described for the duodenum. The only variations from this type are divisions of the segments into thirds instead of halves when the masses are large, or a division into two parts and the subdivision of each part before the mass is united again to undergo a repetition of the process. In the cat, as already stated, segmentation of the food occurs about thirty times in a minute. These constrictions may continue for half or three-quarters of an hour without moving the food perceptibly along the canal. The food is thus divided and redivided over and over again a thousand times or more with no advance. This same operation has been observed in the dog at the rate of from 11 to 22 segmentations per minute and in the white rat at the rate of about 44 to 48 segmentations

per minute—a most remarkable activity for smooth muscle.

The result of the process of rhythmic segmentation must be a thorough mixing of the food with the digestive secretions brought from the stomach and the duodenum and with the secretions of the intestine itself, and a thorough exposure of the digested food to the absorbing walls—since, with each constriction, the absorbing mucous membrane is plunged directly into the midst of the little masses of food. Not only are the processes of digestion and absorption favored by these movements, for Mall has shown that contraction of the intestinal wall has the effect of forcing the venous blood from the submucous plexus into the radicles of the superior mesenteric vein, and has noted that it must have a similar effect on the flow of the lymph. Thus by this single mechanism of segmentation the food and digestive fluids are churned together, the absorbing mucosa is brought in most intimate contact with the digested food, and the blood and lymph, carrying the absorbed material, are sent away through veins and lacteals.

A review of the activities of the small intestine shows that the functions of mixing the food with the digestive juices and exposing the food to the absorbing structures is performed by the process of rhythmic segmentation. The function of propelling the food along the canal may also be performed to a very slight extent by this same process; it is performed typically, however, by the well-known peristaltic wave which has so long been regarded as the chief activity of the intestinal muscles.

There are two matters of practical importance which remain to be mentioned: the effect of antiperistalsis of the colon on rectal injections, and the effect of emotional states on the activities of the alimentary canal. About eight years ago Grützner⁵ reported observations which indicated that materials injected into the rectum might be carried back into the small intestine even as far as the stomach. Since that time some observers have confirmed Grützner's results; others, failing to confirm them, have affirmed that such results were due to carelessly allowing the test materials to become mixed with the food which the animal took normally by mouth. The presence of antiperistalsis in the colon led me to believe that there exists here an activity which would fully account for Grützner's results. Accordingly, I injected into the large intestine enemata of different amounts and of different consistencies. The experiments showed that, when a small amount of the nutrient material was introduced, it lay first in the descending colon. In every instance antiperistaltic waves were set going by the injected mass and the material was thereby carried in considerable amount to the cecum. Never in my experience have these small enemata been carried back through the ileocolic valve. When large injections are given, i. e., amounts nearly filling the colon and cecum, the antiperistaltic waves are effective in forcing the food from the large intestine into the ileum. The ileocolic valve,

5. Grützner: Deutsche medizinische Wochenschrift, 1894, xx, p. 897.

which is competent for food coming normally from the small intestine into the large, is curiously incompetent for this injected substance, even when the substance is of the consistency of thick cream. Radiographs taken at intervals after the injection show that, as time passes, the antiperistaltic waves almost completely empty the transverse and ascending portions of the colon and that the small intestine gradually receives more and more food. After a short time the typical segmenting movements can be seen in the loops, busily separating the food into small masses and again and again dividing and re-dividing them. It is evident that as far as the mechanical activities of the small intestine are concerned this portion of the alimentary canal is bipolar. Food material may enter it at either end; injected food and the nutriment which has come through the stomach in the normal manner are exposed to the same mixing and absorbing activities.

Observations on the stomach of the cat, made in 1898, showed that the peristalsis is stopped whenever the animal manifests signs of anxiety, rage or distress. The extrinsic innervation of a large part of the intestinal tract is the same as that of the stomach, and it is of interest to note that emotional states have the same effect on the movements of the intestines as they have on the movements of the stomach. Any signs of emotion, such as violent rage or even the restlessness and continued whining which indicate anxiety and distress, are accompanied by a total cessation of the segmenting movements in the small intestine and the antiperistalsis of the colon, as well as the total quiescence of the gastric mechanism.

DISCUSSION.

DR. A. C. CROFTAN, Chicago—To what extent did the presence of bismuth in large quantities influence these movements? I believe that some investigators deny the existence of antiperistaltic movements. I would like to ask if bismuth, which would act as a foreign body in the intestine, would modify the intestinal movements?

DR. J. E. O'BRIEN, Scranton, Pa.—I have thought for a long time that many cases of appendicitis were due to loading of the cecum, and this brilliant illustration of the antiperistaltic movements of the ascending colon should shed some light on the subject. Some cases of appendicitis, I believe, begin as congestion of the cecum and extend to the appendix.

DR. W. B. CANNON, Boston—As regards the antiperistalsis of the colon, the animals on which these experiments were performed were kept without food for a day, and I have no means of knowing what takes place except in the food containing bismuth. When food enters the colon, antiperistaltic waves may be seen coursing along the food. This may continue for about five minutes, then there will be an interval of fifteen minutes—the antiperistalsis has been seen starting from the first of the constrictions which you see in one of these photographs of the large intestine. These waves start from the end of the food as it is gradually accumulating in the cecum or the first of the tonic constrictions which occur after the food has come to the further end of the transverse colon. Nothnagel has denied antiperistalsis, but his investigations have only referred to the small intestines, and I agree with him to this extent. In the large intestine, however, there is no doubt that it takes place, for I have seen it in animals whose abdomens have been opened under salt solution. I have also seen it in the dog, and think it probably bears a relation to animals having large ceca. The bismuth does not seem to have any effect on these waves, but this is a critical matter, on which I am working at the present time. I intend adding to the food other substances which are not readily soluble, and which have a sufficient molecular weight to cast a shadow on fluoroscopic examinations.

THE CLINICAL MANIFESTATIONS OF HYDROPHOBIA.*

D. J. MCCARTHY, M.D., AND M. P. RAVENEL, M.D.

From the William Pepper Clinical Laboratory (Phoebe A. Hearst Foundation), and the Laboratory of the Pennsylvania Live Stock Sanitary Board.
PHILADELPHIA.

The usual text-book descriptions of hydrophobia give a clinical course of the disease divided into three stages. It is, however, difficult in practice to separate the clinical manifestations by any fixed rule.

The incubation period is usually about six weeks. In both the cases reported in this paper it was about that length. The onset of the disease is marked by several days of malaise, with slight fever, anxiety and, in a large number of cases, irritation at the seat of the infecting wound. The temperature at this stage is usually elevated one or two degrees, although it may remain at normal. This stage of irritation soon passes over to the convulsive stage. In some cases there is no convulsion or spasm, and the premonitory stage is followed by the paralytic symptoms. The symptoms of the second stage begin with more or less difficulty in the act of swallowing. Anything that excites the swallowing reflex mechanism causes an overflow spasm to the glottis, the muscles of the neck and sometimes to the jaw muscles. As the disease progresses the local spasm is replaced by a general convulsion. The mental state is one of increasing anxiety, both as to the outcome and as to other conditions, until a maniacal condition supervenes, or much more frequently the mental state of a hallucinatory delirium.

The patient may die in the convulsive stage from exhaustion and heart failure or a paralytic group of symptoms supervenes. This so-called paralytic stage may occur in cases where there is very little spasm of the muscles. In these cases it is spoken of as dumb or paralytic rabies. The paralysis is usually one beginning in the lower extremities and later affecting the other extremities. In the delirium there may be passing of the urine and stools in the bed. Some authors include among the paralytic group of symptoms the evidence of cardiac and respiratory failure.

ILLUSTRATIVE CASES.

The following two cases give a picture of the disease as it is met in private and hospital practice.

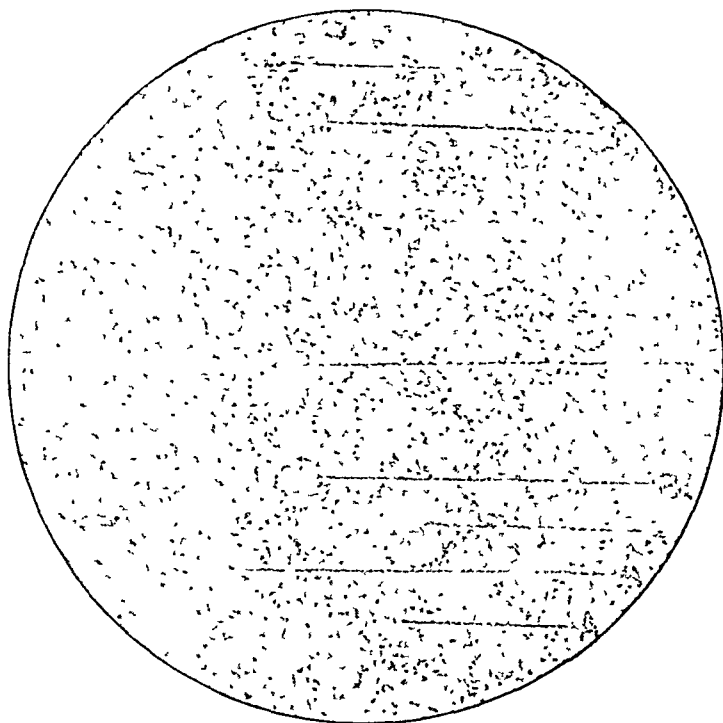
CASE 1.—W. M., male, aged 5, had been perfectly well up to May 13, 1901. At that time he was bitten on the cheek by a stray dog. The wound healed and he appeared to be in good health until Saturday, June 15. During that night he cried during his sleep. The following day he was up and about, but did not appear to be well. He ate very little during the day. Citrate of potassium was administered by the mother; free purgation resulted. Sunday evening he did not appear to be able to drink, as he asked for water and then told them to take it away after attempting to drink it. Monday he was admitted to St. Joseph's Hospital, with a temperature of 101. He was very much frightened, according to notes of the case, evidently the irritative stage of the disease. He was tested as to his ability to drink, and every time he attempted to swallow there resulted a spasm of the glottis and the muscles of the neck and face. He refused to repeat the first attempt. After reassuring him, he again attempted to swallow a mouthful of water, but it came out through the nose by the spasm of the neck, throat and face muscles as in the first attempt. Later the nurse succeeded in getting him to swallow a portion of an apple. In attempt-

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. A. Stengel, Winfield S. Hall and Frank B. Wynn.

ing to wash him, he became nervous when his face was washed, but was still very nervous from the tests at swallowing. At 7:30 p. m. he succeeded, with much difficulty and after much persuading, in drinking 6 ounces of weak coffee. Marked spasms occurred with each mouthful of the fluid swallowed. Shortly after this general tonic convulsions ensued, the contractions of the legs being most marked. At 11 p. m. the pulse became very rapid, the patient became very restless, and in a short time delirium ensued. He imagined he saw his father under a sheet, with holes in it for eyes. The expression, which from the beginning was very anxious, now assumed a terrified aspect. At 11:15 he was pulseless, did not react to stimuli, and died at 12 m.

Autopsy.—The examination of the viscera showed nothing abnormal. The pons and medulla were markedly congested, and in some areas had the appearance as if some small hemorrhages were present.

The microscopic examination of the pons, medulla and cerebral cortex showed a diffuse advanced degeneration of the ganglion cells by the Nissl method. Some of the nerve cells had entirely disappeared and in their place accumulations of deeply staining nuclei could be seen. These nuclei of Babes were more frequent in the medulla than elsewhere. Around the blood vessels of the pons and medulla large ac-



Section of intervertebral ganglia of the cow (Case No. 1), showing the lesions of rabies. A. Marked vacuolation and degeneration of ganglion cells. B. Advanced capsular proliferation filling up the ganglion cell capsule with the proliferated capsule cells.

cumulations of these same nuclei were present. Capillary hemorrhages were found in the upper portion of the medulla, or under the floor of the fourth ventricle.

The intervertebral ganglia showed marked changes. The cells were in a state of advanced diffuse chromatolysis. The capsules of all the cells showed more or less cell proliferation. Some of the capsules were entirely filled with the proliferated capsular cells. The peripheral nerves showed no degeneration.

This case is of special interest on account of its fulminating character. The patient was only sick three days. In reality only one day intervened between the development of the irritative group of symptoms and the boy's death. There were no paralytic symptoms noted. The intensity of the bulbar lesions could easily account for the rapid course of the disease. The perivascular lesions were in their extent and character more like those observed in the lower animals than those of the human being, where all the lesions, as a rule, are less in degree.

We take this opportunity of putting the following case on record:

CASE 2.—The patient was a girl, 8 years of age, who came under the care of Dr. Frederick Krauss on Aug. 12, 1900, by whom diagnosis of rabies was made, and to whom we are indebted for the history. Six weeks before, the child had been bitten on the right ear by a stray dog which she was petting because it seemed to be sick. The dog was put out of the house and lost sight of. The wound was cauterized with nitrate of silver by a druggist, and healed without suppuration. On August 11 the child complained of lassitude, but was restless, and on account of these symptoms her mother gave her a dose of castor oil. The next morning inability to swallow was observed, being attributed to "sore throat," and soon after her mother noticed that, on being touched with a wet towel or exposed to slight draughts of air, she was frightened and startled. Dr. Krauss was called in on this day. The temperature was 100, pulse 120. On giving her a glass of water, she would look at it with dilated pupils for a moment, then suddenly grasp it and quickly attempt to swallow a mouthful. Every trial was followed by severe tonic convulsive contraction of the pharyngeal constrictors and the more external muscles of the neck, lasting about fifteen seconds. Repeated attempts were made, always with the same result. In reply to a question, she said that she was not afraid of the water, but it hurt her throat very much when she swallowed it. She shrank from the slightest current of air. Large doses of bromid of potassium and chloral with morphin were given, but without effect, and the symptoms grew more marked. She passed a sleepless night. On the morning of the thirteenth her temperature was 101.5, pulse rapid. Later in the day she developed a state of intense excitement. She would lie quiet and apparently conscious for a time, then without warning suddenly spring up to her mother, crouch down with short cries of fear, looking at the wall with an expression of great dread, and seemingly unconscious of her surroundings. After about two minutes she would wake as from a dream. Repeated hypodermic injections of morphin had no effect, and she was sent to St. Christopher's Hospital. After a short remission the convulsive seizures became so frequent that almost constant inhalation of chloroform became necessary. When this was left off, she would utter short and loud cries of fear, which might well have been mistaken for the bark of a dog, and attempt to spring out of the bed. Death took place on the morning of the fourteenth, at 6 o'clock.

Autopsy.—The examination revealed congestion of the brain and meninges and minute hemorrhages, while the severity of the convulsions was proven by rupture of the pleura. The train of symptoms left no doubt in the mind of the attending physician that the case was one of hydrophobia, and the diagnosis has been abundantly confirmed by the inoculation of rabbits, as well as by microscopic examination of the bulb and plexiform ganglia of these animals. The inoculations were carried through four generations, the rabbits all dying with typical symptoms of rabies, with the exception of one of the first generation, which died thirty-six hours after inoculation from septicemia. Besides the microscopic examination mentioned, full series of cultures were made, with the object of detecting any accidental infection during inoculation or after. These cultures remained sterile in every instance, so that we are able to exclude with certainty any known bacterial disease.

The clinical and microscopic evidences so far presented in connection with hydrophobia (human being) gives us as much right to regard it as a distinct clinical entity with a distinctive pathology as we have to regard syphilis or tuberculosis as distinct diseases.

EXAMINATION OF ANIMALS WITH RABIES.

We have had submitted to us for examination 105 animals suspected or known to be rabid, including 28 cases reported to the Pathological Society of Philadelphia Jan. 10, 1901. Of these 75 were dogs, 11 cows, 2 horses, 2 cats and 15 rabbits (experimental).

One of the cows and all of the rabbits were experimentally infected. In 83 cases the clinical symptoms

and history were positive of rabies. Many of the dogs were sent to the Veterinary Hospital of the University of Pennsylvania and were under observation from one to three days before death. Forty cases were controlled by the inoculation of rabbits, a few being carried through four generations. In 60 both the medulla and the intervertebral ganglia were examined. In 36 cases only the ganglia were examined, in 7 cases only the medulla. In 2 cases neither could be examined.

In only two cases have we failed to find the lesion of Babes in the medulla when the changes in the ganglia were marked, but in several the bulbar lesion was slight. The vascular tubercle of Babes is much more often found than the one having the nerve cells as a starting point. While the vascular tubercle is frequently found accompanied by very slight changes in or about the nerve cells, we have not seen a case in which the reverse was true.

Of the 75 dogs examined 22 were killed and 53 died. In 44 the type of the disease was furious, in 9 paralytic and in 22 mixed or not reported. We have examined those animals which were killed with especial interest, since in practice we are asked to give a rapid diagnosis in a large number of such cases. The studies of Cuillee and Vallee in France have shown that in dogs experimentally inoculated, then killed at various times after symptoms of rabies have appeared, the changes in the ganglia may not be found, hence the advice is given to allow the disease to run its course, ending in death. Of the 22 dogs which were killed, in 7 we could give no opinion. In 3 of the 7 both the medulla and ganglia were examined. The importance of allowing the animal to die is manifest from this, since in at least one-third of the cases where the animal is killed prematurely no diagnosis can be made except by inoculation with the attendant delay.

The value of the microscopic method is shown in the fact that in 87 of our 105 cases we were able to give a prompt diagnosis by examination of the ganglia alone, and in 94 by the ganglia or medulla.

In view of the fact that changes in the ganglia somewhat similar to those found in rabies have been described in other processes—endothelioma (Speller), diphtheria (Crocq), chronic alcoholism (Burr and McCarthy), forage poisoning (McCarthy and Ravenel)—the clinical history should always be taken into consideration in making the diagnosis. We know of no acute disease in dogs presenting the proliferation of the capillary cells and the tubercle of Babes, and would consider them as diagnostic of rabies in conjunction with a history of an acute clinical course of the disease.

DISCUSSION

ON THE PAPER OF DRS. MC CARTHY AND RAVENEL.

DR. LOUIS C. AGER, Brooklyn—I had a case in the winter, a man bitten by a dog supposed to be mad. The dog was sent to the Pasteur Institute and the diagnosis of hydrophobia confirmed. After treatment at the institute the man came home, on a Friday, and on the following Sunday he was taken sick with nervous symptoms and finally developed a double facial paralysis. Sensation was not affected. He finally recovered, and is now a well man. I have always been curious to know whether this was due to the treatment.

DR. LEO LOEB, Chicago—Lesions have been found in other diseases similar to the ones described in rabies. To judge from our experience with other toxins we would not expect a certain histologic change to be absolutely characteristic for the action of one poison. But for practical purposes, if all circumstances are taken into account, this method seems to be sufficient.

DR. M. P. RAVENEL, Philadelphia—Among our control cases have been a considerable number of animals which had been

used in testing diphtheria and tetanus antitoxins. Many of these animals had lived for a considerable time after showing the symptoms characteristic of the poisons. Animals poisoned by diphtheria toxin were selected because Crocq has found in one case of membranous croup in a child changes similar to those described by Van Gehuchten and Nélis. In none of the animals examined did we find any lesions at all like those seen in rabies. We have also examined a number of cases of distemper in dogs, a disease in which there is often a slow paralysis of the hinder extremities, and several cases of chorea, also in dogs. In none of these have we found similar changes. While we do not hold that these lesions are pathognomonic of rabies, we feel assured that, taken in connection with the clinical history, they are absolutely diagnostic.

In man some four cases have been reported in which changes similar to these have been found, but none of them could possibly have been mistaken for rabies. In the lower animals, in spite of the large number of examinations made by others, as well as by ourselves, I know of but two instances in which changes which could have been mistaken for those of rabies have been found. Both of these were in animals which died of forage poisoning; one a calf, in which the changes were very slight, and the other a horse, which showed well-marked lesions. The lesion is, however, not at all constant in this disease, for we have found it only twice, though many cases have been examined.

As far as dogs go—and this is the animal in which we are most interested in this connection—we have yet to meet with the first case in which there is the slightest reason to suspect that the microscopic findings have led us astray. The experience of two years, amounting to 105 cases, controlled by a large proportion of inoculations, as well as the study of clinical histories and the examination of animals dead of various other diseases, has convinced us of the great diagnostic value of the ganglionic lesion discovered by Van Gehuchten and Nélis.

DR. W. BECKER, Milwaukee, Wis.—Three months ago I performed an autopsy of this kind and made an examination of the spinal cord and ganglia. The only change I noted in the spinal ganglia was a slight tendency toward washing away of the border of the nucleus, and the nucleolus was not as distinct as in normal spinal ganglia. Nessel's bodies were not much affected except the outlines, which were a little indistinct. All I found was a hyperemia, which is hard to diagnose in the spinal cord, this hyperemia extending upward from the dorsal region to the beginning of the cervical enlargement. There was little cellular proliferation around the blood vessels. The changes were not identical with the specimens shown here. I have performed many experiments with diphtheria toxin, and have gotten results similar to those obtained with tetanus toxin, and in neither of these cases was there anything characteristic of the lesions shown here.

DR. E. R. LECOUNT, Chicago—How long would it be safe to let dogs live when you wish to make a diagnosis of rabies? Are there any cases of dogs recovering? I would remind the section that last year at St. Paul Dr. Ohlmacher showed some beautiful specimens illustrating the processes described.

DR. M. P. RAVENEL, Philadelphia—I have never seen a dog live more than three days after the diagnosis is wished for, and usually the time is not so long, so that we can afford to let the dog die of the disease. I have sometimes allowed persons to kill a dog in the last stages of the disease after the paralysis was well marked, and had no trouble in making the diagnosis thereby. There are on record only three or four cases of recovery from rabies in the lower animals. It is an extremely rare thing. If a dog is killed prematurely we may fail to find the characteristic lesions of rabies, and yet we can not exclude rabies, since sufficient time for the production of the changes was not allowed. In such a case it is impossible to say whether the dog was mad or not. The great point is that when these lesions are found we can say with absolute confidence that the dog was rabid, but their absence in a dog killed prematurely does not justify us in saying that the animal was not rabid. In all cases it is well to allow the dog to die of the disease when a rapid diagnosis is demanded.

DR. D. J. MCCARTHY, Philadelphia—In reference to the case which suffered with nervous symptoms and took the Pasteur treatment, I have nothing to offer. I should suppose that it was due to the antitoxin or the treatment itself, but I confess that in a case like this I would not like to offer a positive opinion. As to the matter of these lesions occurring in other conditions, I merely did the microscopic work relative to the neuropathology. But I can say that we have never come across lesions in the intervertebral ganglia in other conditions exactly similar to those of hydrophobia. I reported a case of multiple neuritis with Dr. Burr, in which these capsule cells had proliferated and there was a multiple neuritis, but the lesions were not the same and were without round cell infiltration. The grouping of the cells was in the interstitial tissue rather than in the capsule itself. From *a priori* reasoning we expected to find these lesions in other acute conditions, but as yet we have not found them, except in the isolated cases of epidemic forage poisoning in horses and in the case of diphtheria reported by Crocq.

THE PLANTAR REFLEX IN EPILEPSY, WITH SPECIAL REFERENCE TO THE BABINSKI PHENOMENON.*

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There is a wide diversity of opinion among writers and observers as to the nature and variety of the reflexes in epilepsy with brief, if any, allusion to the plantar reflex, which apparently either escaped observation or was not recorded until within a comparatively recent period. I find no reference to the subject by Gray or Dercum. Dana¹ says: "Immediately after the attack there is a temporary exhaustive paralysis with loss of knee-jerk." Hare² says: "Reflexes are decreased or lost in epilepsy immediately after an attack." Osler³ states that "after the attack the reflexes are sometimes absent; more frequently they are increased and the ankle clonus can generally be obtained." Strümpell⁴ says: "The cutaneous reflexes are still suspended directly after an attack; but the tendon reflexes are generally somewhat exaggerated, although sometimes they are diminished or absent."

Gowers⁵ states that "for a few seconds after a severe fit reflex action in the limbs remains absent. Tickling the sole no longer causes a movement of the leg, and the loss may involve the muscle-reflex action, so that the knee-jerk can no longer be obtained, as Westphal first showed. But this stage of loss is succeeded by temporary increase of myotatic irritability, so that the knee-jerk is excessive and the foot clonus may be obtained. In most cases this increase is alone to be detected. It may be present only on the side on which the convulsion was most severe, i. e., on the side toward which the head is turned. It lasts a few minutes and then passes away. These phenomena are probably the result of temporary exhaustion of the centers concerned—of the muscle-reflex center in the case of loss; of the controlling structures (the terminations of the pyramidal fibers) in the case of excess." Bevan Lewis⁶ says that "certain seizures are invariably followed by exalted knee-jerk and well-marked ankle clonus, the latter immediately succeeding or following a few minutes after the fit. In contrast there are instances where the knee-jerk is completely lost after a severe fit, reappearing slowly in the course of four or five minutes." He does not mention the plantar reflex.

Collier⁷ in 40 epileptics found the extensor reflex present in 38 cases and absent in 2 cases. After every fit of severe convulsions, lasting any length of time, the extensor response was found and lasted for some time. In a patient who had fourteen severe fits in forty hours the extensor response was always present, persisting for seven hours after the last attack, when the flexor response returned. Walton and Paul⁸ found the plantar reflex absent in 7 out of 18 cases tested. Eskridge⁹ in 100 cases of epilepsy found the "plantar reflex present in 93 and absent in 7. In 21 cases subsequently observed the flexor response was present in 18 cases and irregular in 3. In reply to a letter of inquiry in regard to the "irregular" response, Dr. Eskridge writes: "The irregularity consisted in the plantar reflex being neither distinct extension nor flexion. In neither was there a distinct extensor reflex, or Babinski sign, but there was a flexion of the outer toe generally, and in some, one or two, the smaller toes only would flex. The cases were not observed directly after a seizure, but during the interval, when the patient had resumed his normal condition. I have not had an opportunity since I have been observing the plantar reflex to investigate for the presence or absence of the Babinski sign immediately after the convulsions. In most cases of epilepsy where plantar reflex has been present it has been flexion in character; in many cases of epilepsy plantar reflex has been absent. When the patients have been on full doses of bromids the plantar reflex has been invariably absent and usually the knee-jerks also."

Oppenheim¹⁰ does not allude to the plantar reflex in epilepsy, but says "the reflexes are abolished during the attack, and the loss of reflex excitability may last somewhat longer than the attack." It is interesting to quote in full his description of the plantar reflex. "By this term we understand the phenomenon in which excitation of the sole of the foot produces a movement in which the foot is suddenly drawn back. Naturally every form of excitation may produce this movement—touch, hot or cold applications, tickling, etc. The stronger the stimulation the stronger the reflex. The common form is a dorsal flexion (extension?) of the foot and toes; a plantar flexion occurs rarely. A contraction of the tensor fasciæ latæ may be produced by excitation of the sole. In extreme cases not only the foot, but the whole limb may be drawn back by flexion at the hip and knee. The intensity of the reflex varies. Many persons show a response only to very strong excitation, as deep pricking with a needle. Considerable variation exists among individuals as to their sensitiveness to tickling and the reflex produced thereby. We can increase the intensity of a reflex by prolongation of the stimulus or rapid repetitions of single excitations."

L. Pierce Clark¹¹ says: "Since the discovery of the cortical motor area and the pyramidal tracts it has been generally admitted that without the cortex there can be no epilepsy, and the impulses from the cortex must travel to the peripheral nerves along the pyramidal paths, but beyond this nearly everything is still in dispute, and the investigations of different workers are so variant as to make it impossible to harmonize their conflicting views and researches. Cestan and Le Sourd discuss at length the clinical value of the "toe phenomenon" of Babinski, and give the result, among other diseases of the nervous system, of examination of a number of cases of epilepsy. Babinski maintained that there was a close clinical connection between the toe

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phenomenon and "spinal epilepsy," mainly because the toe phenomenon showed as the first symptom of pyramidal involvement in disease of the nervous system. Cestan and Le Sourd therefore hold with Babinski that in partial epilepsies dependent upon organic changes in the pyramids the toe phenomenon is of great importance in diagnosis. This is especially valuable when we remember that even now may organic lesions upon which the so-called idiopathic epilepsies really depend go unrecognized because of the great difficulties which surround their detection."

Beever¹² states that "the plantar reflex was absent immediately after the clonic stage, but returned in from three to thirteen minutes, the average lapse of time before its return being five minutes. Observations were made on 70 in 31 different cases, 47 immediately after the paroxysm and 23 shortly after."

Since October, 1899, the writer has examined the plantar reflex in 35 insane male epileptics under his care, making in all 1,088 tests directly after a seizure, as soon as clonus had ceased, and an equal number one hour later. In 6 cases epilepsy was congenital; in 3 it had lasted for from one to five years; in 2, from five to ten years; in 7 from ten to fifteen years; in 7 from fifteen to twenty years, and in the remainder over twenty years. Cases of grand mal only were tested.

Numerous examinations on each patient were first made at long intervals—one to three days—after a seizure, in order to establish the form for each individual as a basis for comparison. During the tests no bromids or other drugs were used, and a reasonable period was allowed for elimination when they had previously been taken. My chief aim in making these investigations was to ascertain how often the Babinski phenomenon was present; first, in the intervals; second, directly after a seizure, and third, one hour later. Attendants were carefully trained, and no test was accepted until I was absolutely sure that they were competent to observe and record exactly what happened—no more and no less. The interest they displayed and their proficiency are here gratefully acknowledged. Many of the tests were made by the writer personally and many more under his direct supervision.

Certain precautions were insisted upon. The feet must be dry and warm, and shoes and stockings removed before the clonus had ceased, in order to avoid delay. The patient's muscles must be perfectly relaxed and mental repose complete. A smooth stick with a blunt end was used and a deliberate and even stroke, made with moderate pressure from heel to ball of foot, along the outer part of the sole.

Morton Prince¹³ says: "One cause of the discrepancies in reported observations is that there may be two distinct plantar reflexes, one of which is probably cerebral and one spinal. The normal cerebral reflex is generally, if not always, extension of the toes with the same movements (i. e., extension) of the foot. If precautions are not taken the cerebral reflex may mask the spinal reflex and give erroneous results; that is, override the spinal flexion (normal plantar reflex) and produce an extension." It is needless to say that the cerebral reflex, which also includes the withdrawal of the foot and active movements of the leg, was always excluded from my tests.

In the cases where the extension response is recorded there was a deliberate extension of the great toe, more or less marked, usually with separation of the four outer toes. Occasionally only the two outer toes were separated, the other two (second and middle) not mov-

ing. In a very few cases there was no response in any of the four outer toes. In no case was there flexion of any of the outer toes with extension of the big toe. In all cases where the extensor response was present there was dorsiflexion of the ankle, usually of moderate extent, and occasionally a temporary increase of the plantar arch. In two cases it was very difficult to secure mental repose and consequent complete muscular relaxation, thereby inhibiting the cerebral reflex. Hence, all observations where these conditions were not completely fulfilled were rigidly excluded.

Here follows a brief abstract of the thirty-five cases, with reports of two autopsies.

CASE 1.—Farmer, aged 41, epilepsy congenital; type, grand mal. Has occasional stupor lasting from four to fourteen days. Intervallary reflex; both feet flexor,* with an occasional extensor response in left foot. Knee-jerks very active; 32 tests. Results after fits: both feet negative, 9; both feet extensor, 4; right negative, left extensor, 2; both feet flexor, 3; right flexor, left negative, 5; right flexor, left extensor, 9. One hour after: both feet negative, 1; both feet extensor, 2; both feet flexor, 17; right flexor, left negative, 2; right flexor, left extensor, 10.

Here there was complete abolition of plantar reflex in 28 per cent. of tests after a seizure, and in only 3 per cent. one hour later. The intervallary reflex (in this case the normal one) was present in 9.4 per cent. after seizures, and in 53 per cent. one hour later.

CASE 2.—No occupation. Age 23; epilepsy at 19, after a fall. Type, grand mal. Has had occasional dreamy states, and during past three months has been in a stupor, with spastic gait and rather rigid muscles. 65 tests. Intervallary reflex is flexor in right foot; extensor in left; knee-jerks exaggerated. Results after fits: both feet negative, 35; both feet extensor, 19; right extensor, left negative, 3; right negative, left extensor, 4; both feet flexor, 2; right flexor, left extensor, 2. One hour after: both feet negative, 13; both feet extensor, 11; both feet flexor, 14; right flexor, left negative, 8; right flexor, left extensor, 16; right negative, left extensor, 3. In four tests stroking of left foot produced extension of big toe on right foot (crossed plantar).

Here there was complete abolition of plantar reflex in 53.8 per cent. of tests after a seizure, and in 20 per cent. one hour later. The intervallary reflex (right foot flexor, left extensor) was present in only 30 per cent. after a seizure, and in 24.6 per cent. one hour later.

CASE 3.—Age 23; no occupation; father died insane. Traumatic epilepsy, due to blow on head in left temporal region at 10. Quiet dementia. Seizures very infrequent; grand mal. Intervallary reflex is flexor, both feet, rather slow, with absent knee-jerks. Only three tests made. Results after seizures: both feet extensor, 1; both feet flexor, 2. One hour after: both feet extensor, 1; both flexor, 1; both negative, 1.

In this case there was some kind of reflex after each seizure, and abolition in one foot only one hour later, or 33.3 per cent.

CASE 4.—Age 19; no occupation. Epilepsy began at 13; grand mal; 24 tests. Intervallary reflex: both feet flexor; knee-jerks very active. Results after fits: both feet negative, 23; right negative, left extensor, 1. One hour later: both feet negative, 1; both feet extensor, 6; both flexor, 9; right flexor, left extensor, 8.

Here there was complete abolition of plantar reflex in 96 per cent. of tests after a seizure, and in only 4 per cent. one hour later. The intervallary reflex was present in no case after a seizure, and in 37.5 per cent. one hour later.

CASE 5.—Barber, aged 68; alcoholic epilepsy; onset at 48; seizures very infrequent; grand mal; 3 tests. Intervallary reflex, mixed form, extension predominating. Knee-jerks active. Results after fits: both feet extensor, 1; both feet flexor, 2. One hour later: both feet negative, 1; both extensor, 1; both flexor, 1.

* In all the cases, as well as in the table, etc., it should be understood that the words "feet" or "foot flexor, extensor," etc., mean a flexion or extension of the toes; negative—no response.

CASE 6.—Farmer, aged 38. Epilepsy developed between five and ten years of age; grand mal; 75 tests. Intervallary reflex, mixed form—sometimes flexor, sometimes extensor in either or both feet.

Results after fits: both feet negative, 37; both feet extensor, 10; right extensor, left negative, 3; right negative, left extensor, 8; right flexor, left negative, 3; right negative, left flexor, 7; right extensor, left flexor, 2; right flexor, left extensor, 5. One hour later: both feet negative, 31; both feet extensor, 11; right extensor, left negative, 2; right negative, left extensor, 2; both feet flexor, 2; right flexor, left negative, 2; right negative, left flexor, 1; right flexor, left extensor, 24.

Here there was complete abolition of the plantar reflex in 49.3 per cent. of tests after seizures, and in 41.33 per cent. one hour later. The intervalary reflex occurred in 50.7 per cent. of tests after seizures, and in 55.97 per cent. one hour later.

CASE 7.—Farmer, aged 50; epilepsy at 25; grand mal; seizures very infrequent. Has occasional furor and equivalents; 11 tests made. In the intervals there is complete absence of plantar reflex and knee-jerks. Results after fits: both feet negative, 10; right foot flexor, left negative, 1. One hour later: both feet negative, 4; both feet flexor, 3; right flexor, left negative, 3; right flexor, left extensor, 1.

Here there was complete abolition of plantar reflex in 90 per cent. of tests after seizures, and in 36 per cent. one hour later.

CASE 8.—Age 26; no occupation. Epilepsy began at age of five months. Patient is practically an imbecile. Seizures very frequent; grand mal; 14 tests. Intervallary reflex: flexor in one foot, usually the right; absent in the other; knee-jerks moderate. Results after fits: both feet negative, 6; both feet flexor, 3; right flexor, left negative, 1; right flexor, left extensor, 4. One hour later: both feet negative, 8; both feet flexor, 5; right flexor, left negative, 1.

Here there was complete abolition of plantar reflex in 43 per cent. after fits, and in 57 per cent. one hour later.

CASE 9.—Factory employe, aged 33. Epilepsy appeared at 22; has occasional stupor; 39 tests. Intervallary reflex: usually right foot extensor, left flexor; occasionally extensor in both feet; knee-jerks moderate. Results after fits: both feet negative, 22; both extensor, 9; right extensor, left negative, 3; right negative, left extensor, 3; right flexor, left extensor, 2. One hour later: both feet negative, 5; both feet extensor, 8; right extensor, left negative, 1; both feet flexor, 7; right flexor, left negative, 2; right flexor, left extensor, 16.

Here there was complete abolition of plantar reflex in 56.4 per cent. after seizures, and in 12 per cent. one hour later. The usual intervalary reflex was found in no case after seizures or one hour later.

CASE 10.—Mechanic, aged 34; epilepsy developed at 21; grand mal; 102 tests. Intervallary plantar reflex: flexor in one or both feet; knee-jerks moderate. Results after fits: both feet negative, 78; both feet extensor, 1; right extensor, left negative, 3; right negative, left extensor, 2; both feet flexor, 2; right flexor, left negative, 11; right negative, left flexor, 2; right flexor, left extensor, 3. One hour later: both feet negative, 34; both feet extensor, 7; right extensor, left negative, 6; right negative, left extensor, 5; both feet flexor, 4; right flexor, left negative, 37; right negative, left flexor, 2; right flexor, left extensor, 7.

Here there was complete abolition of plantar reflex in 76 per cent. of tests after seizures, and in 33 per cent. one hour later. The intervalary reflex was present in 14.7 per cent. after seizures, and in 42 per cent. one hour later.

CASE 11.—Plumber, aged 48; onset of epilepsy at 20 following left hemiplegia. Measurements of limbs as follows:

	Right.	Left.
Arm—length	37.5 c.m.	38.3 c.m.
Arm—circumference	33.7 c.m.	28.6 c.m.
Forearm—length	25.4 c.m.	23.4 c.m.
Forearm—circumference	29.9 c.m.	26.0 c.m.
Hand—circumference	21.0 c.m.	19.7 c.m.
Thigh—length	53.5 c.m.	53.5 c.m.
Thigh—circumference	57.8 c.m.	50.8 c.m.
Leg—length	38.8 c.m.	38.2 c.m.
Leg—circumference (calf)	36.2 c.m.	31.2 c.m.
Ankle—circumference	24.7 c.m.	24.7 c.m.
Foot—circumference (arch)	24.7 c.m.	24.7 c.m.

Patient has no use of left hand, which shows marked wrist drop with flaccid contractures of fingers, but can swing arm from shoulder. Left foot shows marked pes cavus. Patient swings and partially rotates left foot in walking, bringing it to the floor with a sudden flap. Character of seizures, grand mal, very severe, and average 1-1.8 days; 29 tests made. Aura; dazzling of eyes, and everything seems to be in motion, and a chill comes over left side of body. Convulsions begin by a shaking of the right hand; then a wild cry is uttered and he falls to the floor; convulsions pass rapidly down right side to foot, causing it to turn inward, and then pass over to left side, where they are most severe. Clonus lasts about three minutes, is followed by stupor for about five to ten minutes, when he arises, and resumes his seat as if nothing had happened. Intervallary plantar reflex; right foot flexor, left (paralyzed) foot, a marked extensor. Results after seizures: both feet negative, 13; right flexor, left negative, 9; right flexor, left extensor, 4; right absent, left extensor, 3. One hour later: both feet negative, 15; right flexor, left extensor, 5; right flexor, left negative, 4; both feet extensor, 1; both feet flexor, 1; right negative, left flexor, 3.

Here there was complete abolition of plantar reflex in 45 per cent. of seizures after fits, and in 51.7 per cent. one hour later. It is interesting to note that the usual intervalary reflex—right flexor, left extensor—was present in four tests out of twenty-nine, after fits, and in five one hour later. There was an extensor response in left foot only in three other tests after fits, and one hour later an extensor response in both feet. There was never any flexor response in left foot after seizures, but it occurred in four tests one hour later. Why there should be a flexor response in the paralyzed foot I am unable to explain.

CASE 12.—Age 32; no occupation. Onset of epilepsy during first dentition. Seizures have continued ever since at pretty regular intervals, with steadily progressive mental deterioration. Has periodical excitements when he stutters and repeats phrases, etc. (word clonus). Seizures usually nocturnal; only seven day-seizures in past three years; 74 tests. Intervallary plantar reflex; flexor response in both feet; knee-jerks absent. Results after fits: both feet negative, 64; both feet extensor, 1; both feet flexor, 1; right flexor, left negative, 6; right negative, left flexor, 1; right flexor, left extensor, 1. One hour after: both feet negative, 22; both flexor, 19; right flexor, left negative, 29; right negative, left flexor, 3; right flexor, left extensor, 1.

Here there was complete abolition of plantar reflex in 89 per cent. of tests after seizures, and in 30 per cent. one hour later. The intervalary reflex was present only once after seizures, and in 26 per cent. one hour later.

CASE 13.—Factory employe, aged 49; alcoholic epilepsy; onset at 36; seizures infrequent; grand mal; 42 tests. Intervallary reflex: right foot flexor, left negative; knee-jerks moderate. Results after fits: both feet negative, 23; right flexor, left extensor, 5; both feet extensor, 7; right flexor, left negative, 1; right negative, left flexor, 3; right flexor, left extensor, 3. One hour later: both feet negative, 20; both extensor, 3; right extensor, left negative, 1; right negative, left extensor, 3; right flexor, left negative, 7; right negative, left flexor, 4; right flexor, left extensor, 4.

Here there was complete abolition of plantar reflex in 55 per cent. of tests after seizures, and in 48 per cent. one hour later. The intervalary reflex was present only once after a seizure, and in 16.6 per cent. one hour later.

CASE 14.—Age 34; no occupation; epilepsy began at four. Has had repeated furors in former years, in one of which he killed a man with a blow of his fist. Now displays fluctuations chiefly in the emotional sphere, having periodical depressions when he reproaches himself, weeps, fears death is imminent, and begs piteously for a priest and his brother. Seizures severe but infrequent; 16 tests. Intervallary plantar reflex: extensor in one or both feet. Results after fits: both feet negative, 12; right negative, left extensor, 3; right flexor, left negative, 1. One hour later: both feet negative, 10; both extensor, 1; right extensor, left negative, 1; right negative,

left extensor, 1; both flexor, 1; right negative, left flexor, 1; right flexor, left extensor, 1.

Here there was complete abolition of plantar reflex in 75 per cent. of tests after seizures, and in 62 per cent. one hour later. The intervallary reflex was present in 18 per cent. of tests after fits, and in 25 per cent. one hour later. This patient once had status epilepticus—12 severe seizures, each lasting from ten to fifteen minutes with intervals varying from ten to twenty minutes. Consciousness was totally abolished, not only in the intervals, but for four hours after the last fit, and during this whole period the plantar reflex was absent in each foot.

CASE 15.—Age 28; no occupation; onset of epilepsy in "childhood." Patient is pompous and affected; writes absurd poetry; and has had several attacks of status which were always aborted by compression of the carotids. Seizures very frequent and severe; 14 tests made. Intervallary plantar reflex: both feet an active flexor, with very active knee-jerks. Results after fits: both feet negative, 5; both extensor, 1; right negative, left extensor, 1; both flexor, 1; right flexor, left negative, 2; right flexor, left extensor, 4. One hour later: both negative, 7; both extensor, 3; both flexor, 3; right flexor, left extensor, 1.

Here there was complete abolition of plantar reflex in 36 per cent. of tests after fits, and in 50 per cent. one hour later. The intervallary reflex was present only once after a seizure, and in 21 per cent. one hour later.

CASE 16.—Laborer, aged 36. Had syphilis in 1894-5, epilepsy developing soon after. No focal symptoms. Has occasional dreamy states; seizures very infrequent; only 7 tests made. Intervallary plantar reflex; usually flexor in one or both feet; occasionally an extensor response in left foot, none in right; knee-jerks moderate. Results after fits: both feet negative, 3; both extensor, 1; both flexor, 2; right extensor, left flexor, 1. One hour later: both feet negative, 4; both extensor, 1; both flexor, 1; right flexor, left extensor, 1.

CASE 17.—Farmer, aged 51; heredity denied; cause unknown. Epilepsy appeared at 36; seizures occur in groups of four to eight, usually in one night, with intervals of about four weeks, and are very severe, being followed by profound stupor lasting from one to two days; 18 tests. In one group of four fits there was some kind of response after each; in another group of five there was a response after the second, third and fifth fit, and none after the other two. During the post-epileptic stupor the reflexes were absent in 33 per cent. of tests, and present in some form in the remainder. Intervallary reflex: extensor response in both feet usually, sometimes in right only. Results after fits: both feet negative, 15; right extensor, left negative, 2; right negative, left extensor, 1. One hour later: both feet negative, 6; both extensor, 3; right extensor, left negative, 4; right negative, left extensor, 2; right flexor, left negative, 1; right flexor, left extensor, 2.

Here there was complete abolition of plantar reflex in 83 per cent. of tests after seizures, and in 28 per cent. one hour later. There was an extensor response in either right or left foot in two tests after fits; and the usual intervallary response in 39 per cent. one hour later.

CASE 18.—Age 27; no occupation; grandfather insane; paternal great-uncle an epileptic. At age of 14 had whooping cough, and shortly after began to have epileptic seizures, which at first were nocturnal, and are so now for the most part. At times very religious, with periods of violence. Is a confirmed masturbator. Presents stigmata of degeneration—ogival palate, irregular rodent teeth, and asymmetry of skull and face. Averages 3.46 seizures daily, without bromid, the use of which, while diminishing the number of fits, makes him very irritable and unmanageable. He recovers rapidly from seizures and in the intervals is bright, alert, and keen, showing no perceptible deterioration for the past fourteen years; 84 tests. Intervallary reflex: extensor response in both feet; knee-jerks very active. Results after fits: negative, 38; both feet extensor, 9; right absent, left extensor, 5; both feet flexor, 9; right flexor, left negative, 9; right flexor, left extensor, 14. One hour later: negative, 20; both feet extensor,

3; right negative, left extensor, 1; both flexor, 31; right flexor, left negative, 22; right negative, left flexor, 1; right flexor, left extensor, 6.

In this patient we find his usual plantar reflex—an extensor response—present in only 9 out of 84 tests after seizures, and in only 3 one hour later; there was a flexor response in one or both feet in 18 and 53 cases, respectively, while the reflex was abolished in 38 and 20 cases.

CASE 19.—Laborer, aged 48; alcoholic epilepsy at 36, seizures very infrequent and usually nocturnal; 15 tests. Intervallary plantar reflex; flexion, with an occasional extensor response in left foot; knee-jerks very active. Results after fits: both feet negative, 11; both flexor, 2; right negative, left extensor, 2. One hour later: both negative, 3; both flexor, 8; right flexor, left negative, 1; right flexor, left extensor, 3.

Here there was complete abolition of plantar reflex in 73 per cent. of tests after seizures, and in 20 per cent. one hour later. The intervallary reflex was present in 13 per cent. and 60 per cent., respectively.

CASE 20.—Laborer, aged 42; epilepsy at 4. There is simple but pronounced deterioration, with infrequent transitory distempers; seizures of moderate frequency, but severe; 23 tests. Intervallary plantar reflex; an active extensor response in each foot; knee-jerks variable. Results after fits: both feet negative, 4; both extensor, 8; right extensor, left negative, 1; right negative, left extensor, 7; both flexor, 1; right negative, left flexor, 1; right flexor, left extensor, 1. One hour later: both feet negative, 5; both extensor, 8; right extensor, left negative, 3; both flexor, 4; right flexor, left negative, 1; right flexor, left extensor, 2.

Here there was complete abolition of plantar reflex in 17 per cent. of tests after seizures, and in 22 per cent. one hour later. The intervallary response (both feet extensor) was present in 35 per cent. after fits, and in 35 per cent. one hour later.

CASE 21.—Cigar maker, aged 26; onset of epilepsy at 11; has periodical transitory distempers; 44 tests. Intervallary plantar reflex; both feet flexor; very active knee-jerks. Results after fits: both feet negative, 30; both extensor, 3; right extensor, left negative, 1; right flexor, left negative, 2; right flexor, left extensor, 6; right negative, left extensor, 2. One hour later: both feet negative, 6; both extensor, 2; right extensor, left negative, 1; right negative, left extensor, 1; both feet flexor, 25; right flexor, left negative, 3; right flexor, left extensor, 6.

Here there was complete abolition of the plantar reflex in 68 per cent. of tests after seizures, and in 14 per cent. one hour later. The intervallary reflex was absent in all tests after seizures, but present in 57 per cent. one hour later.

CASE 22.—Farmer, aged 47; onset of epilepsy in childhood; has periodical transitory distemper; 16 tests made. Intervallary plantar reflex: variable, usually flexor in one or both feet, rather seldom extensor in both feet; knee-jerks moderate. Results after fits: both feet negative, 13; both extensor, 1; right extensor, left negative, 1; right flexor, left extensor, 1. One hour later: both feet negative, 3; both flexor, 13.

Here there was complete abolition of plantar reflex in 81 per cent. of tests after seizures, and in 19 per cent. one hour later. The intervallary reflex was absent after seizures, but present in 31 per cent. of tests one hour later.

CASE 23.—Farmer, aged 25; father intemperate; onset of epilepsy at 13. Besides typical grand mal he has peculiar attacks which warrant a full description. He also presents psychic equivalents in the form of brief periods of bewilderment, and occasional conscious delirium with a marked religious coloring. In October, 1898, he attacked without provocation a fellow patient, saying, "I want to kill you." Regular seizures: no aura; head and eyes draw slowly backward and to the right and then he would fall. Tonus lasted a few seconds, then the left shoulder would be elevated, the arms would lie close to side, hands clenched with thumbs between index and middle fingers, and a general clonus ensue. Clonus would be followed by a heavy sleep for two or three hours from which he could not be aroused.

In January, 1900, he averaged eight of these seizures daily for one week, when he became so exhausted that it was necessary to confine him to bed, where he remained quietly, rarely changing his position and apparently indifferent to the external world. Four days later he became very restless and exceedingly noisy at night. During the ten days that he remained in bed he had only four fits, but as soon as he was allowed to be in the ward he began to have a very peculiar kind of attack. At the beginning he would walk in a circle with diameter of about six feet, gradually going faster and faster until he fell to the floor, generally striking on his left side, with head flexed. As soon as he fell he would begin kicking with both feet and striking with his hands, or catching hold of anyone near him with a tenacious grip. During these attacks his muscles become rigid but there is no clonus. Consciousness is deeply clouded, although the eyes move as if recognizing objects. As he emerges from the attack he begins to laugh heartily, and in a few minutes gets up and has complete amnesia of all that has occurred. When the attacks occur at night he kicks around in bed for awhile and finally rolls (it is not a fall) to the floor, where he kicks very little, gets up and rattles the doorknob or raps on the door. This sort of attack was present for two months without any typical grand mal intervening, and has been noticed occasionally since. There was scarcely a day when he did not have at least one, and on some days he had four or five. In a few, consciousness was not wholly clouded and he would respond to a loud, sharp order.

Intervallary plantar reflex: right foot flexor, left extensor; reflex occasionally absent; knee-jerks moderate; 38 tests. Results after fits: both feet negative, 21; both extensor, 1; both flexor, 5; right flexor, left negative, 8; right negative, left flexor, 1; right flexor, left extensor, 1. One hour later: both feet negative, 16; both extensor, 1; both flexor, 8; right flexor, left negative, 8; right negative, left flexor, 5.

Here there was complete abolition of plantar reflex in 55 per cent. of tests after seizures, and in 42 per cent. one hour later.

All the above results were in cases of grand mal only; tests made during the peculiar attacks described above furnished variable results corresponding pretty closely to those found in the former.

CASE 24.—No occupation; age 28; onset of epilepsy at 10; occasional dreamy states; 29 tests. Intervallary plantar reflex: both feet a very active extensor; knee-jerks very active. Results after fits: both feet negative, 11; both extensor, 6; right negative, left extensor, 6; both flexor, 3; right flexor, left extensor, 3. One hour later: both negative, 9; both extensor, 13; both flexor, 3; right negative, left flexor, 2; right extensor, left flexor, 1; right flexor, left extensor, 1.

Here there was complete abolition of plantar reflex in 38 per cent. of tests after seizures, and in 31 per cent. one hour later. The intervallary reflex was present in 21 per cent. of tests after seizures and in 45 per cent. one hour later.

CASE 25.—Musician, aged 43; alcoholic epilepsy with marked deterioration, especially in memory and judgment. Seizures very infrequent and often light; 11 tests. Intervallary plantar reflex: both feet very active extensor; knee-jerks very active. Results after fits: both feet negative, 8; both extensor, 1; right negative, left extensor, 2. One hour later: both negative, 6; both extensor, 4; right flexor, left extensor, 1.

Here there was complete abolition of plantar reflex in 73 per cent. of tests after seizures, and in 55 per cent. one hour later. The intervallary reflex was present only once after a seizure, and in 36 per cent. one hour later.

CASE 26.—Laborer, aged 33; alcoholic epilepsy; seizures very infrequent, but numerous attacks of petit mal; 4 tests. Intervallary plantar reflex; mixed type; sometimes flexor or extensor in both feet, and sometimes flexor in right and extensor in left. Results after fits: both feet extensor, 2; right negative, left extensor, 1; both flexor, 1. One hour later: both feet flexor, 2; right extensor, left flexor, 1; right flexor, left extensor, 1.

CASE 27.—No occupation; age 40; had scarlet fever at 7, followed by paralysis of left side, with shortening and marked atrophy of limbs; left arm absolutely helpless. Convulsions began some time later, commencing in left side and rapidly becoming general; 16 tests. Intervallary plantar reflex; right foot flexor, with an active extensor response in left foot; knee-jerks exaggerated, more so on left side. Results after fits: both feet negative, 10; right negative, left extensor, 1; both feet flexor, 3; right flexor, left negative, 2. One hour later: both feet negative, 3; both flexor, 7; right flexor, left negative, 4; right flexor, left extensor, 2.

Here there was complete abolition of plantar reflex in 62 per cent. of tests after seizures, and in 19 per cent. one hour later. The intervallary response was absent after each seizure but present in 13 per cent. one hour later. The appearance of a flexor response in the left toes in three tests after seizures and in seven tests one hour later is interesting. The writer has, however, found similar anomalies in the reflex in several hemiplegics—not epileptic—at different times, i. e., sometimes an extensor response, sometimes a flexor and sometimes no response whatever in the paralyzed foot.

CASE 28.—Age 17; onset of epilepsy in infancy; has periodical distempers; seizures very infrequent but severe, and followed by several hours of stupor; 23 tests. Intervallary plantar reflex: right flexor, left extensor; occasionally extensor in both feet; knee-jerks very active. Results after fits: both feet negative, 21; right extensor, left negative, 2. One hour later: both feet negative, 4; right extensor, left negative, 2; both feet flexor, 11; right flexor, left negative, 3; right negative, left flexor, 1; right extensor, left flexor, 2.

Here there was complete abolition of plantar reflex in 95 per cent. of tests after seizures, and in 14 per cent. one hour later. The intervallary reflex was absent not only after seizures but also one hour later.

CASE 29.—Epileptic imbecile, aged 40; onset in infancy; seizures infrequent; 27 tests. Intervallary plantar reflex: right foot flexor, left negative; knee-jerks moderate. Results after fits: both feet negative, 25; right negative, left flexor, 1; right flexor, left extensor, 1. One hour later: both feet negative, 10; both flexor, 6; right flexor, left negative, 9; right flexor, left extensor, 2.

Here there was complete abolition of plantar reflex in 92 per cent. of tests after seizures, and in 37 per cent. one hour later. The intervallary response was absent after all seizures, and present in 33 per cent. of tests one hour later.

CASE 30.—Laborer, aged 64; alcoholic epilepsy; onset in middle life; seizures infrequent; 4 tests. Intervallary plantar reflex: flexor in one foot, the other negative; knee-jerks moderate. Results after fits: both feet negative, 3; right flexor, left extensor, 1. One hour later: both feet negative, 1; both flexor, 1; right flexor, left extensor, 2.

CASE 31.—No occupation; aged 41; a moderate drinker; epilepsy began at 23 after a severe attack of measles; seizures very frequent, averaging 1.69 daily. The bromids made him very irritable, and are seldom given; 84 tests. Intervallary plantar reflex: right foot extensor, left flexor not very marked; knee-jerks fairly active. Results after fits: both feet negative, 48; both extensor, 7; right extensor, left negative, 14; right flexor, left negative, 12; right flexor, left extensor, 3. One hour later: negative 37; both feet extensor, 5; right extensor, left negative, 7; right negative, left extensor, 3; both flexor, 8; right flexor, left negative, 16; right negative, left flexor, 6; right flexor, left extensor, 2.

Here there was complete abolition of plantar reflex in 57 per cent. of tests after seizures, and in 44 per cent. one hour later. The intervallary reflex was absent, not only after the seizures but also one hour later.

CASE 32.—Carriage maker, aged 54 (?); onset of epilepsy in 1883; had syphilis at age of 25-30. Has dreamy states, in one of which he lacerated his throat with a small piece of scrap-iron which he had picked up while out walking. Seizures infrequent; 26 tests. In the intervals the plantar reflex is absent; in only one out of numerous tests an extensor response was found in right foot; knee-jerks very sluggish and slight.

Results after fits: both feet negative, 19; right flexor, left negative, 3; right negative, left flexor, 2; right flexor, left extensor, 2. One hour later: both feet negative, 16; both flexor, 1, right flexor, left negative, 6; right negative, left flexor, 3.

Here there was complete abolition of the plantar reflex in 73 per cent. of tests after seizures and in 62 per cent. one hour later. It is interesting to note that in this case, where there is practically no plantar reflex in the intervals, some kind of response was found in 27 per cent. of cases after seizures and in 38 per cent. one hour later.

CASE 33.—No occupation; age 39; no history of case obtained; 37 tests. Intervallary plantar reflex: variable, with flexor response predominating; knee-jerks very active. Results after fits: both feet negative, 19; both extensor, 5; right negative, left extensor, 3; both flexor, 5; right flexor, left negative, 2; right flexor, left extensor, 3. One hour later: both feet negative, 11; both extensor, 7; both flexor, 7; right flexor, left negative, 4; right flexor, left extensor, 8.

Here there was complete abolition of the plantar reflex in 51 per cent. of tests after seizures, and in 30 per cent. one hour later. The intervallary reflex was present in 19 per cent. of tests after seizures and in 30 per cent. one hour later.

CASE 34.—Age 39; heredity unascertained; onset of epilepsy in childhood. Stigmata: ill-shaped and flaring ears, asymmetry of skull and face; narrow and high palate, and prognathism. Patient very religious, loquacious, with great tendency to detail and noisy. He had frequent attacks of moderate furor, usually following fits, but sometimes as equivalents. Seizures averaged one in two days, and were very severe; clonus began in right side of face—the eyes rolling in the same direction—and rapidly extended to right arm and leg, and then to left side. As clonus abated he would rub his right side, leg, and head. About five minutes later he would regain his feet and rush violently around the ward, screaming and resisting violently but automatically all attempts at restraint. After he would whine in a peculiar manner. Consciousness was fully restored in about twenty minutes. He reacted poorly to bromids; 21 tests made. The intervallary plantar reflex was a flexor response in both feet; knee-jerks sluggish. Results after fits: both feet negative, 7; both extensor, 4; right extensor, left negative, 1; right negative, left extensor, 2; right flexor, left negative, 2; right flexor, left extensor, 5. One hour later: both feet negative, 3; both extensor, 7; right extensor, left negative, 1; right negative, left extensor, 1; both flexor, 1; right flexor, left negative, 6; right flexor, left extensor, 2.

Here there was complete abolition of plantar reflex in 33 per cent. of tests after seizures, and in 13 per cent. one hour later. The intervallary response was never present immediately after seizures, and but once only, one hour later.

Autopsy 13 hours after death. The specimens from the cerebral cortex and spinal cord were placed in the fixing and hardening solutions fourteen hours after postmortem. The cord specimens were fixed and hardened in Mueller's fluid, and those of the brain in a 95 per cent. alcohol (Nissl method) and Zenker's (eosin-methylene stain), and also in Mueller's fluid (Cox-Golgi method). The cord specimens were stained according to the Kulschitzky-Wolters method with Van Gieson's picric acid and fuchsin stain. The sections examined in the cord were taken from the first and eighth dorsal, the third lumbar, and fourth sacral segments. All of these sections presented a normal appearance. The brain weighed 1235 grams, but in all respects appeared normal from the microscopic examination. The microscopic examination of the cortex, including specimens from the right and left paracentral lobules, and from the first frontal convolution on each side, failed to disclose any apparent abnormality, except the great congestion of the blood-vessels. The cortex was not reduced in thickness, and the ganglion cells were well arranged and of normal number.

CASE 35.—No occupation; age 37; onset of epilepsy at 15; cause unascertained. About five years before death patient developed periods of stupor, lasting from three to ten days, during which his muscles were spastic, and there was complete

incoördination, with static ataxia. He was usually kept in bed at these periods, but when up sat with head flexed to the limit; his hands were clenched with thumbs turned in, and arms drawn up, while one leg was crossed over the other, and swung rhythmically to and fro in an automatic manner. This swinging motion of legs was partly volitional, to all appearances. Occasionally he would walk in a zig-zag manner for a short distance, always stepping on the ball of the foot and toes, with the heel well elevated about two inches from the floor. One year before death this spastic condition became permanent, and often one could lift him as if he were a log. He always swallowed well, even to the very last. He had been completely demented for several years.

A marked ankle clonus was always present, and also a clonus of arms and legs on exertion. His knee-jerks were exaggerated to the most extreme degree, as well as the cutaneous reflexes, the plantar reflex presenting marked extension of all the toes on both sides, with separation of the four outer (a pure Babinski). The pupils were usually dilated but presented no inequalities. Seizures infrequent, but severe; 16 tests. Results after seizures: both feet negative, 15; both flexor, 1. One hour later: both feet negative, 5; both extensor, 3; right negative, left extensor, 2; right flexor, left extensor, 6.

Here there was complete abolition of the plantar reflex in 94 per cent. of tests after seizures, and in 31 per cent. one hour later. The usual intervallary response—extensor—in each foot—was never present immediately after a seizure, and in only 19 per cent. of tests one hour later.

Autopsy thirteen hours after death. The technic employed in the preparation of the specimens from the spinal cord and cerebral cortex was similar to that used in the preceding case (34), except that a segment from the medulla and all of the cortical specimens were in addition stained according to the Marchi method; and the cord specimens were hardened in Zenker's and stained by the eosin-methylene blue method. After hardening in Mueller's fluid the entire cord was sectioned in gross at intervals of 1 cm. Macroscopically, these gross sections gave no evidences of patches of sclerosis. Microscopically, sections were examined from the first and sixth cervical, third dorsal, and fifth lumbar segments. None of these sections gave evidence of sclerosis in any of the columns of the cord. The anterior horn cells were normal throughout the cord; and the posterior horn cells appeared normal in the cervical and dorsal regions. In Clarke's columns the ganglion cells showed more or less marked chromatolysis, with displacement of the nucleus to the periphery of the cell body. The brain weighed 1200 grams. The pia was somewhat edematous over the vertex. Specimens of the cerebral cortex, taken from the right and left paracentral lobules and from the first frontal convolutions on each side, showed a slight leptomenigitis, a slight increase of glia cells in the superficial layer, and an alteration of the cytoplasm of the ganglion cells, which corresponds to the cell shrinkage described by Hoch. The cortex was not shrunken and the ganglion cells were of good number and arrangement. The blood vessels of the cortex were much congested.

Both autopsies were made by Dr. A. R. Defendorf.

SUMMARY.

Tests for the plantar reflex were made on thirty-five insane male epileptics and include: 1, 700 observations at varying intervals between seizures in order to establish a norm for each individual; 2, 1,088 tests made immediately after seizures, as soon as clonus had ceased, and 3, a similar number of tests made an hour later. In these 35 patients we found the individual intervallary reflex to be of the normal type—flexion of toes on both sides—in 10 cases; there was a marked extensor response (Babinski) in 7; no response whatever in 2; and in the remaining 16 cases a mixed response, i. e., right flexor, left extensor, 5; right flexor, left negative, 5; right extensor, left flexor, 2, and in 4 cases an irregular response, sometimes flexor, sometimes extensor, or

varying mixtures of flexor, extensor and negative in one or other foot, with no predominant type. The percentages were: flexor response, 28.57 per cent.; extensor response (Babinski), 20 per cent.; mixed response, 45.71 per cent., and entire absence of response in 5.71 per cent.

The plantar reflex presented even more variations from the normal type in tests immediately after cessation of clonus and one hour later, as seen in the following table, which shows nine variations.

Table showing type of plantar reflex in 35 insane epileptics:

Type.	Inter-vallary.	After Clonus.	Per cent.	1 hour later.	Per cent.
Extensor response on each side..	7	103	9.56	112	10.29
Right extensor, left negative....	0	33	3.04	29	2.66
Right negative, left extensor....	0	66	6.07	24	2.20
Flexor response on each side....	10	45	4.04	226	20.78
Right flexor, left negative.....	5	81	7.44	179	16.46
Right negative, left flexor.....	0	18	1.66	32	2.94
Right extensor, left flexor.....	2	3	0.27	4	0.36
Right flexor, left extensor.....	5	79	7.26	143	13.15
Irregular	4	..	..	..	..
No response in either side.....	2	660	60.66	339	31.16
Totals.....	35	1088	100.00	1088	100.00

From this table we see that there was an extensor response on the right side in 12.87 per cent. and on the left side in 22.89 per cent. of tests immediately after seizures; while one hour later the results were respectively 13.31 per cent. and 25.65 per cent. This predominance, nearly two to one, of the extensor response on the left over the right side, is interesting and noteworthy. When an extensor response was found on one side only it was more frequent in the left foot. Including all the tests we find a right extensor response 69 times, and a left extensor 312 times.

We also see that some kind of plantar reflex—flexor extensor or mixed—was found in 40 per cent. of tests made as soon as clonus had ceased and in 68 per cent. one hour later. In Case 14, as well as in two other cases where status epilepticus occurred, but not included in these observations, the reflexes were totally abolished in the intervals, and for periods after the last seizure varying from four to eight hours. In only one case (No. 7) was there complete absence of an extensor response in all tests immediately after fits. It is somewhat difficult to compare my tests, made at exact periods, with those reported by others, who leave the exact time in doubt, except Collier, who states that "after every fit of severe convulsions lasting any length of time the extensor response was found present and lasting some time." Some writers, as Eskridge, tested epileptics only in the intervals.

The appearance of a flexor response on the paralyzed side several times in two cases of post-hemiplegic epileptics (Cases 11 and 27) is interesting. If the Babinski phenomenon is never present except in pyramidal lesions, are we to assume that such lesions occur in epilepsy, or may the extensor response in the latter be due to a temporary disturbance in the pyramidal tracts on one side only or on both sides? It is certain that as far as my tests go the Babinski sign does appear on both sides at once, or on right and left side only, after some seizures, and after others we find a normal, mixed or negative response in the same patient.

In conclusion, the results of 2,176 tests of the plantar reflex in epileptics within one hour after seizure, plus 700 tests made in the intervallary periods to establish the norm for each individual, show that in any given patient the plantar reflex displays marked variations.

although in each case some one type is more or less predominant. The explanation is not easy and the variations are hard to understand, but perhaps no more so than epilepsy itself.

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REMARKS CONCERNING THE MANAGEMENT AND TREATMENT OF RHINOPHARYNGEAL TONSILS BY THE GENERAL PRACTITIONER.*

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As teachers in the graduate schools of general medicine we should endeavor to give that instruction which our matriculants can safely make use of after returning to their homes. I know that they receive no more enthusiastic nor more frequent instruction than that concerning adenoids. I wish to address you in behalf of those children who live in the country districts, far from the larger towns, from whence it is either impossible or inexpedient for them to be taken in order that a specialist may treat them according to some of the many vaunted methods.

It is possible to teach the general practitioner to perform the various operations suggested for the removal of adenoids, but the time required for the proper instruction in the delicate practical manipulative technic of certain methods of procedure makes many of them unfeasible. Operations with the Lowenberg's forceps or some of its modifications should not be attempted by one who does not fully appreciate the amount of harm that can be done to the rhinopharyngeal tissues.

On the other hand, any general practitioner with little or no practical skill can be readily and easily taught to operate safely with the Gottstein curette or some of its modifications. When considering the subject of rhinopharyngeal tonsillotomy one must weigh the merits of the respective methods, first as to the safety to life and the prevention of injury to the other tissues; second, approximately complete removal of all the offending lymphoid masses; third, hemorrhage; fourth, the humanitarian side. The serious death rate among the cases of general anesthesia should be more carefully investigated as to the cause and percentage. The destruction of tissue, other than lymphoid, can never be determined unless we are permitted to examine macroscopically and microscopically the masses that have been removed.

In regard to complete removal, it has been demonstrated that recurrence and new growths occur after all methods of extirpation, but far less frequently after general anesthesia and the use of forceps than the other methods. As to frequency of harmful hemorrhage the curette, by its sharp-cutting edge, is more liable to cause alarming bleeding than the forceps constructed after

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the original idea of Lowenberg. When we consider the horrible suffocating struggles of a resisting child as it is being put under ether, in some cases, it would seem a mercy to remove the growths under cocain; of course, this is all done away with where nitrous oxid gas is previously administered. But it is concerning the management of the rhinopharyngeal tonsils by the general practitioner that we wish to speak.

In certain cases the general practitioner may successfully use the adenoid forceps, the snare or the finger nail, but these methods can not be so universally and favorably adopted by him as procedure by the curette. It has been my custom to urge the general physicians whom I have had the honor of teaching to use the curette after thorough cocainizing for at least half an hour; the cocain is passed on a curved cotton carrier behind the soft palate to the uppermost part of the adenoid; this is done at intervals of from five to ten minutes; the solution of cocain employed varies from 10 to 100 per cent. A 0.1 per cent. solution of cocain should be sprayed through the nose and then stronger solutions should be used on cotton carriers or through canulas passed through the nose. The child is wrapped with a sheet, which should pass around his body several times, with the hands down by the sides in soldier position; the sheet is then tightly and securely pinned from top to bottom, the child is then placed on the right knee of assistant or attendant, who embraces him firmly with arms and legs and the head is securely held by the nurse. For general use a medium-sized semi-circular shaped curette which has been well sharpened is passed upward behind the soft palate until it strikes the posterior border of the septum, then it is firmly driven upward until it strikes the vault and presses on the rostrum of the vomer. The cutting surface of the curette must be kept at right angles to a perpendicular line through the center of the head, a quick, firm movement is made directly backward and downward; usually the large mass removed consists of nearly all of the adenoid tonsil proper. The curette is reintroduced, rapid and moderately firm scrapings are made in both of Rosenmüller's fossæ and over the posterior pharyngeal wall, then the finger is introduced and any remaining masses are broken up and smoothed down.

The after-treatment consists of an immediate insufflation of a powder composed of equal parts of aristol and boric acid. The patient should be denied active exercise and should not be allowed to go where he can not be seen quickly by the operator or his assistant in case of serious bleeding.

Every student should be carefully and practically instructed in the details of tamponage of the rhinopharynx. The author has found the smallest sized urethral catheter, from which the stylet has been removed, to be the best instrument for passing the strings through the nose and mouth. The tampon should be from three-quarters to one and one-quarter inches in diameter, the age of the child determining the size, should be aseptic and antiseptic and remain in position from twelve to thirty-six hours. The earlier it is removed, other things being equal, the less the liability to an attack of otitis media acuta.

DISCUSSION.

Dr. C. R. HOLMES, Cincinnati—I scarcely feel like criticising anything that Dr. Myles says. I have great admiration, as we all have, for everything he does and for his ability. But I can not quite agree with the sentiments of his paper. It has been my experience to let internes in the hospitals and my assistants operate, and I often notice they make very bunglesome efforts at operations, and if these men, who have been with

specialists and have helped in operations, will leave a large part of the posterior mucous membrane hanging down as a flap, because they carry the curette too far downward and backward (and that occurs once in a while with operators who are fairly expert), if the general impression gets out that the general practitioner should do this operation there would be many unfortunate results. There are many general practitioners who can do this operation, but it is generally the one who is least competent who thinks he can do it, and it is for that reason I can not subscribe to the Doctor's idea that the general practitioner should be taught to do the surgical operation. I have made nothing like the number of operations Dr. Myles has, but I have made a few hundred, and I always make them under chloroform or nitrous oxid. I do not regard it as such a simple operation, if you do a thorough and clean operation. If it is not so easy in the hands of a man who has made several hundred operations, it is probably less so, and complications are more likely to occur, in the hands of one not accustomed to use instruments so much.

Dr. J. E. BROWN, Columbus, Ohio—I have been much interested in this subject of adenoids for the past fourteen years, and have performed a large number of operations for the disease. As I look back to those operations I did ten years ago I believe I did not do as thorough work then as now. I say this to bring out the point that this operation rightly performed is not so simple a one that the general practitioner without experience can do it thoroughly. I now and then attempt an operation on young children under cocain, and frequently in these operations done in this manner I have had later to give a general anesthetic and do the more thorough operation. Dr. Richards' paper, it seems to me, brought out the point that a general anesthetic is necessary for the proper treatment of these cases. Our general practitioners should be taught that it is a procedure demanding a general anesthetic. If then they wish to attempt it without general anesthesia, all well and good, but this should not be our teaching.

We hear it stated that naso-pharyngeal adenoids should be removed when symptoms of obstruction are present. I have been much surprised in some of the cases that have come to me with symptoms of middle ear trouble, in which adenoids were present, at the immense size of the adenoid masses removed, yet in which cases there had been absolutely free nasal breathing.

Dr. EDWIN PYNCHON, Chicago—I have been doing this operation as often as possible without an anesthetic. I believe the fear of the child while struggling over the anesthetic is often worse than the pain of the operation. As regards the use of cocain to reduce the pain in this operation, I think its value is more fanciful than real. The use of cocain often causes almost as much annoyance as the operation itself. I find, though, that by introducing two cotton applicators, one through either nostril, and then having the patient or somebody else press them against the pharyngeal wall, I probably get as much effect therefrom as in any other way. When the forceps are used, I think it is wise to use the curette afterward. One of the disadvantages in using the curette is that a fragment drops down back of the uvula every once in a while, as suggested by Dr. Holmes. Now, why does this occur? It is because the curettes most often used, when introduced into the vault, have the cutting blade at such an angle that it is the side instead of the edge of the blade that first does the cutting, while lower down the cutting edge cuts too deeply, so a piece is permitted to fall down behind the uvula. I have had a curette so made that it cuts at the highest point and also has side cutting blades, with which the fossa of Rosenmüller on either side can be curetted.

Dr. ROBERT C. MYLES, New York City—The paper referred especially to that class of cases that could not be seen by a specialist, and I do not know how many such cases there are. The general practitioner can remove with one movement of the curette most of the adenoid tissue. These cases are improved, even by an imperfect operation. Many of the general practitioners do the operation when they could send the case to a specialist, but I am pleading for the remote districts.

toury, and I, in this way, obtain the following advantages, viz.:

1. A practically bloodless field so all of the diseased tonsillar tissue can be cleanly removed.

2. Owing to lack of hemorrhage no loss of the local anesthetic.

3. By the cauterization a destruction thereof should any portion of the follicular element escape the line of dissection.

The time limit will not permit of my describing in this paper the steps of the operation which has been elsewhere described at different times (see Bibliography, Nos. 16, 17, 18, 19 and 20), and which I have employed on more than a thousand occasions.

By this method of operating the tonsil generally peels out with facility, and often bloodlessly, the incisions being as though cutting through cheese, though in some cases sclerotic tissue is encountered which gives a sensation more like that of cutting leather. I might add that in the removal of an enlarged fibrous tonsil, the form of tonsil in which fatalities from hemorrhage after an ordinary tonsillotomy have been most often reported, this method of operating by "electro-cautery dissection" gives the greatest promise of immunity from that complication as the line of incision is outside of the area of sclerosis.

My results have been ideal and have generally yielded a throat with fauces pink instead of red, a throat with mobile and approximating pillars, which with vocalists has enhanced the high register by two or three notes, and a throat the tonsillar region of which is never afterward the source of pain or discomfort to the patient. Furthermore, there has generally been an improvement in the nasopharyngitis, and in the tubal catarrh should such conditions have previously existed, and the same may be said concerning gastrointestinal disturbance or chronic bronchial catarrh, and lastly with singers there has followed a diminished tendency to recurrent laryngitis. It will, of course, be understood that all deformities or troubles of the nose or nasopharynx, when such were present, were also corrected.

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DISCUSSION.

DR. J. F. BARNHILL, Indianapolis—Until recently a large per cent. of the tonsillotomies, even by men in the specialty, were imperfectly done for the reason that the instruments used were nearly all some kinds of tonsillotomes. The class of cases which Dr. Pyncheon described in his paper is one in which the tonsillotome can not be successfully used. If one attempts to use this instrument in such a case, he simply cuts off the top of the tonsil. I have been in the habit of classifying tonsils into two very broad divisions: one in which we remove the glands for the reason that they produce obstruction to breathing, and the second in which we remove them because they have infected pockets and are, therefore, the source of periodic or possibly constant inflammation.

Coulter removes part of a tonsil at a time, with electricity, dissecting it away. These tonsils are always adherent, and my method has been to dissect them away from the pillars, by electricity, so they can be lifted out easily, and then snare them away en masse. It is to me much easier and quicker; possibly to Dr. Pyncheon it might not be. I have never followed the method of removing a part at a time and thus extending the operation over some thirty or forty days, as has been described by Dr. Coulter. I have always removed them at once and I have never had occasion to regret doing the entire operation at one sitting. I believe the value of the method described here comes not only from removing the tonsil crypts but also from the fact that we free the pillars of the fauces, which are muscular organs, and thereby we give greater freedom to the organs of voice.

DR. ALBERT H. ANDREWS, Chicago—Dr. Pyncheon is the originator of this plan of operation. Dr. Coulter's description and use of the method was several years later than Dr. Pyncheon's first publication of it. In the classification of chronically-diseased tonsils three divisions is all that seems necessary: first, simply inflamed tonsils; second, hypertrophic tonsils; and third, atrophic tonsils. This classification is in accord with the well-known pathologic changes resulting from chronic inflammation in other parts of the body. In the first division, the simple inflammation, the blood-vessels are congested and the tissues engorged, but there is no structural change in the tissue. In the second division there is a proliferative change in the tissue, and in the third division the connective tissue is contracted and the lumen of the vessels is lessened, and with the lessening of the blood-supply there comes atrophy. The third division is the degenerate tonsils Dr. Pyncheon mentions. In removal of the tonsils I have not used the method Dr. Pyncheon describes because I have not as yet had occasion to find any fault with the method I have been using. If I believed Dr. Pyncheon's method better, taking all things into consideration, the pain produced and the time it is necessary to subject the patient to the discomfort of that operation, I would use his method. To my mind, however, it is not justifiable. My method is first to liberate the tonsil from the anterior and posterior pillars. I pass an angular knife down first between the tonsil and the anterior pillar. Adhesions between the tonsil and anterior pillar are usually more pronounced than between the tonsil and the posterior pillar. After the tonsil has been liberated from the pillars, I care not how deeply submerged it may appear to be, if it is caught by a double tenaculum forcep, it can be pulled outward from between the pillars and cut off. I sometimes use scissors and sometimes a tonsillotome for this purpose. As regards pain and hemorrhage, if pledgets of cotton saturated with a solution of cocaine are pushed into the crypts of the tonsil and around behind the tonsil for a few moments, and then pledgets of cotton introduced into the crypts saturated with adrenalin, the hemorrhage will be exceedingly slight and the pain hardly worth mentioning. I wish to speak against the method which I would call "tonsil snatching." There is no necessity for hurry in these cases. If the patient is a child and will not hold still so you can do the right kind of operation, give him an anesthetic and operate with care. Thorough removal of the tonsil will be followed by satisfactory results, whether the removal is accomplished by scissors, tonsillotome or the galvanocautery. I was struck with one statement Dr. Pyncheon made, that if portions of the tonsils were accidentally left the cautery would destroy them. If the cautery will destroy the base of a tonsil accidentally left why will it not destroy adjacent normal tissues when the entire tonsil has been removed?

DR. D. A. KUYK, Richmond, Va.—Those of us who have read Dr. Jonathan Wright's articles on the effect of the electro-cautery on the nasal mucous membrane, for he says the effect of the cauterization is so great, extending so far beyond the point cauterized, entirely beyond our power to limit it to any given surface or area, would hesitate before ablating the tonsil with the electro-cautery. The large area cauterized might cause subsequent cicatricial contraction with no means in our

power to limit it, involving perhaps the palatine pillars causing perhaps alteration in vocalization that might be most unfortunate in singers, elocutionists, public speakers, etc. I have a case in point in which this very effect resulted.

Cicatrization caused contraction between the anterior and posterior pillars; they were twice severed, but recurred, the patient declined any further treatment and left with considerable impairment of the voice. This result may have been my fault, but every possible precaution was used, everything was done to stay the cicatricial contraction, but nothing availed.

Dr. WILLIAM L. BALLENGER, Chicago—I have seen probably 25 per cent. of Dr. Pyncheon's cases, in all stages of operation, and I have seen him operate. I have seen a number five, six or seven years old, and I will say I have never seen any results that compared with those obtained by Dr. Pyncheon. He gets the most beautifully clean-looking throat I have had the pleasure of looking into. There is no evidence of undue cicatricial formation. Judged by its results, it is certainly an ideal method. But I have not felt inclined to use it extensively because it requires from four to six sittings to remove two tonsils, and there is considerable inflammatory reaction in some cases; in others there is very little. If one should, in the course of the operation, burn the muscular fibers of the anterior or posterior pillars, there might be some serious complications interfering with the use of the voice. It seems to me that accident would result only from the lack of experience in the use of the method. In none of the cases I have seen has that resulted. My own method for the complete removal of the tonsils, which I prefer in adult cases and in the cases which Dr. Pyncheon has denominated the submerged cases, is to dissect them out with the knife. If the adhesions are not extensive this is an easy matter. Often I find the adhesions very extensive, not only in the region of the posterior and anterior pillars but in the pharyngeal aponeurosis as well, and in some of those cases it requires considerable care to separate the adhesions. But it can be done and the tonsil removed very completely. If there are no adhesions, then the tonsil can be enucleated practically with a dull instrument, such as the handle of the knife, for instance. Dr. Beck was present when I removed a tonsil in this way. It leaves a smooth pocket and probably would give results as good as Dr. Pyncheon has secured. By this method I can remove two tonsils at a sitting and save my patients and myself considerable work and some pain. I have used cocaine anesthesia in this operation, the strength of the cocaine solution ranging from 10 to 20 per cent. With the 20 per cent. solution, however, I have had in a few cases considerable cocaine poisoning. Usually I do not use a solution stronger than 10 per cent. As a rule the patients say it does not hurt or that it hurts very little.

Tonsils are removed for other purposes than because they are degenerated or adherent or for the purpose of improving the voice. The posterior pillar is the palato-pharyngeus muscle, that is, it contains this muscle, the fibers of which extend up to the mouth of the eustachian tube and control more or less the patency of the tube, and so we may remove the tonsils to improve tubal and middle-ear disease as well as to improve the voice. Mackenzie and Curtis have said that they never observed anything but improvement of the voice from removal of the tonsils. I certainly have not, and some of Dr. Pyncheon's patients who were singers, declare that they have only secured a good effect in this way. I would only say of his method that it probably requires more skill than some of the other methods, but nobody could get better results than Dr. Pyncheon obtains.

Dr. J. C. BECK, Chicago—Dr. Pyncheon and I work almost side by side, and have worked for two years in the same clinic. I see his cases often and know his results. I am asked by the students often about his operation, and in order to be able to answer intelligently I have done his operation a number of times. After he has operated—and he has operated on a considerable number of physicians—his patients come back and say that they have been benefited very much. That is a good while after the operation. For the first week the patients, including the physicians he has operated on, complained bit-

terly of the pain from the operation, whether it was done in one sitting or two. The reaction following the use of the cautery is very marked. There are symptoms of sapremia that make the patients very ill. The results from the operation, nevertheless, are good.

The Doctor removes the pillar. He says part of the pillar is degenerated with the tonsil and should be removed. I have satisfied myself that this part of the pillar has some use, and I do not remove it. It has muscular fibers in it, and I am opposed to its removal. I have seen cases the Doctor has operated on, in which the posterior pillar was very much hypertrophied, probably from taking on some of the action of the anterior pillar. Sometimes a layer of the pillar comes over the anterior surface of the tonsil and may be mistaken for the pillar, it is the *plica tonsillaris*, and its removal, aside from that, is a tedious, unnecessary operation. Dr. Pyncheon teaches his pupils to do the operation very easily, but it requires considerable teaching of the patient so that he may hold the tongue depressor, and the constant holding and the sight they make in doing the operation sometimes is very annoying. I treat these degenerated tonsils by slitting the ducts. By this I often do not succeed, but sometimes there is very great amelioration of the symptoms. For the removal of them I use punch forceps much similar to Dr. Myles' punch, only it is square, and I excise the tonsils with knife or scissors. One thing in favor of cauterization is the prevention of bleeding. It has been said that the bleeding is not much, and that the adrenalin, etc., will stop it, but sometimes it is considerable, and if the use of the cautery will avoid this danger it is something in its favor.

Dr. G. HUDSON MAKUEN, Philadelphia—One of the speakers has said that Dr. Pyncheon advises an operation extending to the removal of a portion of the anterior pillar, but I have not understood this from his paper nor from his previous writings. The opercular fold is not a part of the pillar, although it has muscular fibers in it. It is a part of the tonsil rather than of the pillar. The removal of any portion of the anterior palatoglossi muscles would be bad surgery, for it would change their length and thus interfere with their natural functions. I would like to ask Dr. Pyncheon what he does with the opercular fold, which sometimes forms a mass larger than the tonsil itself. I have sometimes removed it. It is very vascular and it contains muscular tissue.

Dr. P. J. GIBBONS, Syracuse, N. Y.—Tonsils that often are removed may be treated conservatively by stripping them from adhesions to the pillars and then treating with iodine, camphor menthol or nitrate of silver. Bosworth has told us that the tonsils never will bleed too much, therefore let them bleed. Later Bosworth got up a snare for the removal of the tonsils, evidently he must have thought there was reason for it. I tried chopping everything off. But I saw some hemorrhages that were rather alarming. Then I used a tonsillotome, which I first dulled. If you are going to take out the tonsil by piecemeal, you can do it with the snare, and still better with the cautery. If you want to remove the entire tonsil with the cautery there is everything in knowing how to use the electro-cautery. Of course, an inexperienced man might do a great deal of harm in this way. I would encourage a little conservatism in removing the tonsil. Sometimes it is sufficient to remove it only partially. I refer now to the small tonsil that we may retain. There is a function for everything in the body, even the appendix, more than for the surgeon to operate on.

Dr. GEORGE F. KEIFER, Lafayette, Ind.—We ought always to remember, in removing the tonsil, no matter what method we use, if we get the bottom of the crypts we will accomplish everything desired in its removal. I have been doubtful in the cases of alleged total removal of the tonsil that I have seen as to whether the tonsil has been entirely ablated. I have, however, never seen any of Dr. Pyncheon's results.

Dr. EDWIN PYNCHON, Chicago—Owing to the time limit I did not attempt to describe the operation in my paper or touch on the technic thereof. I have, however, brought with me the instruments I use, which it may interest you to see. In the

cautery handle I have the contact arranged on the outside so that it may be readily kept clean. I have had the ends of the electrodes made large so that the electrode is held more firmly in the handle. Platinum is not so good, I have found, as irido-platinum, which you may heat red hot and it will still retain its shape. These electrodes and the handle are made by F. A. Birtman & Co. of Chicago. I have here also a tongue depressor which enables the patient to hold down his own tongue. And here are some forceps I find very convenient for grasping the tonsil. Several of the objections made by the gentlemen were already met in the paper which they did not hear, as they came in too late. Dr. Myles, this morning, mentioned the inefficiency of the tonsillotome in removing the tonsils. If any of you desire to become familiar with this operation, I will take great pleasure in sending you a description thereof in a reprint. It was not the purpose of the paper to deal with the enlarged tonsil, which is of annoyance chiefly as an obstruction. Its follicles are very small, and it is simply an obstruction, and that is all. Follicular hypertrophy is found in the degenerated condition of which my paper treats. As to Coulter and myself, I reported the operation in 1890, and Dr. Coulter, I believe, began doing the operation about five years later and has become quite enthusiastic over his results. He has done good work. One of the physicians thought it was a septic inflammation which follows the removal of the tonsil in this way; it is not a septic condition, but a burn; an eschar made to keep out sepsis. After the operation I apply a 20 per cent. solution of nitrate of silver and thus make a coating over the wound. I originally took out the entire tonsil at one sitting and sometimes had hemorrhage therefrom. Now, since dividing the operation in two steps, I do not have much hemorrhage. Anybody who does radical work on the tonsil will have an occasional hemorrhage. The hemorrhage I got was chiefly a capillary hemorrhage. There was no point of spurting. I found the motion of the tongue assisted somewhat in the production of hemorrhage, so I took out one half of the tonsil at a time. The greatest amount of expertness is required in removing the upper half. There is hardly any hemorrhage from removing the lower half, nor is there much pain. Nowadays, when I see a little bleeding point, I cauterize that point and apply nitrate of silver. In this manner I can do a practically bloodless operation. Most of the bleeding is where the forceps take hold of the tonsil, to pull it out of its bed, but this amounts to only a few drops. The after-effect of the cocain may cause some secondary hemorrhage, but now I generally avoid that. The time required for the operation depends largely on the dexterity of the operator. I have taken out an entire tonsil in two and a half minutes. I have frequently taken out the upper half in from one and a half to two minutes. I usually work for half a minute and then rest a minute, and then work again for half a minute. In these cases the follicular element is hypertrophied. Dr. Kuyk mentioned something entirely apropos, and that is the matter of cicatricial contraction. I have once in a while had slight cicatricial contraction. I have found if before I operate the anterior pillar is adherent to the tongue that it becomes reattached later on. If the anterior pillar is not attached at the start it does not become attached after the operation. If you make the incision longitudinally in the muscle you will not get contraction; but if you make the incision across the muscle, you may get contraction. In regard to the cases sent to Dr. Ballenger for inspection they were not picked cases. I sent him several cases operated on from three or four to as long as ten years ago. In regard to the use of the angular knife of Yearsley I do not think that the tonsil can be entirely removed with the knife, because bleeding obscures the field so one can not get all the follicular element in that way. I learned that the submerged tonsil was very much buried beneath the anterior pillar so after its removal there was left a hole which would retain secretions, therefore I began to take away more and more of the pillar. You see, gentlemen, this operation is the outgrowth of experience and trial. What I take away is principally mucous membrane of the pillar. After the wound is healed one can not see that any of the anterior pillar has been sacrificed. The part of the pillar I

remove is the posterior edge of the anterior pillar. As to cocain, I have never had a prostration from the application of cocain to the fauces when applied with the cotton applicator. I always add from 5 to 10 per cent. of phenol to my cocain solution, and that may have something to do with it. I formerly used stronger solutions of cocain, but now I frequently get good results from a 10 per cent. solution. I have sometimes used hypodermatic injections of cocain in the pillars. It does not do any good to inject cocain into the tonsil, but it must be injected into the pillars, and preferably under the mucous membrane, so as to produce a bleb, but I have had some intoxication from so doing. By making applications of a 10 per cent. solution and taking plenty of time, I generally get good anesthesia, and I have fancied that the tendency to hemorrhage has been less than when stronger solutions were used. As to the line of demarcation, you will at first find a general redness of the fauces, but if you make the patient gag it will lighten up the anterior part and darken the posterior part, so the line of demarcation shows up clear and distinct, it being directly over the anterior edge of the diseased tonsil. In practice I find the burn causes no harm to the pillar at all, and I make the incision while the patient is on the gag. I remove all of the diseased tissue, and with the after-treatment the wound heals up properly. During the time of healing I insist on the patient returning regularly so I can massage the wound. There is a tendency for connective tissue to form in the wound so it fills up irregularly, therefore I massage it so as to make it heal up solid from the bottom. I fully agree with Dr. Gibbons as to the desirability of getting rid of a diseased tonsil. The total loss of a tonsil does the economy no harm. It is bad surgery to partially remove a diseased tonsil.

DR. BARNHILL—If you could dissect the tonsil loose and remove it as completely with the snare, would you still prefer your method?

DR. PYNCHON—I want to do the operation in a bloodless manner, if possible, and I can do that better with the hot point. After dissecting the tonsil loose so that it is ready to come out, which would be the better to do: to put on the snare or to simply complete the removal with the hot point? What is the use of changing then to the snare? In a very sensitive patient or a child I may use a tonsillotome to clip off the partially loosened piece, but that is the only time.

OTITIC BRAIN ABSCESS.

REPORT OF TWO CASES: APHASIA IN ONE, RECOVERY.*

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LAFAYETTE, IND.

CASE 1.—May 7, 1900, through the kindness of Dr. A. B. Westfall, I was called to see John S., aged 18, who had been taken to St. Elizabeth Hospital. He had suffered with the left side of his head for a month. His condition was as follows: His temperature was 102; pulse, 124; extreme prostration was manifest and his general appearance indicated extreme pyemia. The left ear was discharging. The mastoid was tender to the touch. His tongue was covered with a brown fur and his teeth with sordes. The patient was perfectly rational and answered questions intelligently; no examination was made for aphasia because of the patient's extreme condition. Because of this an immediate operation was agreed on.

At 11 a. m., with the assistance of Drs. Westfall, Throckmorton, White, Morrison, Lee, Hillis and Hopper, the operation was begun in the usual way. The periosteum was scraped aside. When the trephine was applied over the site of the mastoid antrum and given two turns it suddenly sank into the bone. Removing it with the button of bone we saw the whole bone necrosed and filled with granulations and with the most

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offensive pus of a greenish hue. The bone was so rotten that all debris was removed by a sharp spoon only. The tegmen between antrum and brain cavity was also necrosed. This was removed and the dura opened. After cleansing the cavity in dura and bone the wound was packed, drained and dressed.

MAY 7.

At 1:30 p. m. the temperature dropped to 98, and pulse to 94.
At 3:30 p. m. it was 101.4 F., and pulse 92.
At 5:00 p. m., 101.2 F., P. 96. At 9:30 p. m., 103.6 F., P. 120.
At 6:30 p. m., 103.4 F., P. 105. At 11:00 p. m., 104 F., P. 108.
At 8:30 p. m., 104 F., P. 124.

MAY 8.

At 1:45 a. m., 102 F., P. 104. At 10:50 a. m., 103.6 F., P. 130.
At 5:00 a. m., 102 F., P. 106. At 12:15 p. m., 103 F., P. 94.
At 7:00 a. m., 103.2 F., P. 102. At 2:00 p. m., 104 F., P. 100.
At 8:45 a. m., 103.8 F., P. 104. At 4:45 p. m., 103 F., P. 94.
At 9:45 a. m., 104.2 F., P. 130. At 7:25 p. m., 104.6 F., P. 104.

Because of the pulse and temperature it was felt that a further exploration of the brain cavity should be made. At 8:30 p. m., with the same physicians assisting, the wound was reopened and the skin incision was continued upward and the bone beneath skin and periosteum was removed by rongeur to the extent of a square inch. The dura was black and necrotic. This was opened after ascertaining that it was loose as far around as a probe could be passed between dura and bone. The temporosphenoidal lobe was necrotic. The pus was as offensive as ever. The lateral sinus and jugular were free. After cleansing the brain cavity as carefully as possible it was drained with gauze and the wound dressed. The patient was put to bed at 9:25 p. m., when the temperature was 102 and pulse 98.

MAY 9.

At 12:30 a. m., 102 F., P. 98. At 12:30 p. m., 102 F., P. 101.
At 3:10 a. m., 101 F., P. 98. At 3:30 p. m., 101.8 F., P. 100.
At 5:00 a. m., 100.6 F., P. 96. At 6:00 p. m., 103.6 F., P. 112.
At 7:45 a. m., 100.8 F., P. 94. At 9:30 p. m., 102.4 F., P. 110.
At 10:00 a. m., 104.4 F., P. 113. At 12:00 m., 102 F., P. 106.

MAY 10.

At 3:00 a. m., 102.4 F., P. 110. At 3:00 p. m., 99.2 F., P. 100.
At 5:30 a. m., 103.4 F., P. 112. At 7:00 p. m., 99.2 F., P. 100.
At 9:00 a. m., 102.6 F., P. 114. At 11:00 p. m., 98 F., P. 118.
At 12:00 m., 100.8 F., P. 114.

MAY 11.

At 2:00 a. m., 101 F., P. 124. At 1:45 p. m., 99.2 F., P. 124.
At 6:00 a. m., 101 F., P. 120. At 5:30 p. m., 101.6 F., P. 135.
At 8:00 a. m., 100.4 F., P. 116. At 9:00 p. m., 103 F., P. 125.
At 10:00 a. m., 100.8 F., P. 116.

MAY 12.

At 1:00 a. m., 104.6 F., P. 144. At 2:00 p. m., 102.6 F., P. 140.
At 5:00 a. m., 103.4 F., P. 140. At 5:35 p. m., 101.4 F., P. 140.
At 8:15 a. m., 103.6 F., P. 150. At 9:35 p. m., 102.8 F., P. 130.
At 11:00 a. m., 104.4 F., P. 140.

MAY 13.

At 1:00 a. m., 103.4 F., P. 132. At 12:00 m., 105 F., P. 150.
At 4:00 a. m., 103 F., P. 132. At 6:00 p. m., 104.4 F., P. 158.
At 6:00 a. m., 103 F., P. 132. At 10:35 p. m., 102 F., P. 145.

MAY 14.

At 1:30 a. m., 103.2 F., P. 145. At 1:30 p. m., 104.4 F., P. 158.
At 6:00 a. m., 103 F., P. 145. At 4:30 p. m., 103 F., P. 165.
At 9:00 a. m., 104.2 F., P. 144.

The patient died shortly after this. The respirations were hurried in proportion. Several injections of anti-streptococcic serum were of no avail. Nuclein was also tried with a similar result. The patient could not retain food either by mouth or rectum. Normal saline injections per rectum were rejected. Then they were tried subcutaneously. Wherever introduced the skin sloughed markedly. The odor was so frightful that in dressing the wound every three or four hours it was necessary to stop one's nostrils until we used equal parts of oil of eucalyptus and menthol in the wound, which was suggested by Dr. McMahon, who received it from Dr. Ida Levering of Secundrabad, India. This controlled the odor beautifully and removed the disagreeableness of dressing the wound so frequently.

The remarkable feature of this case was the fact that his mental faculties were unimpaired to the very last, notwithstanding the extensive destruction of brain tissue.

CASE 2.—July 26, 1901, through the courtesy of Drs. Hillis and Thompson, I was asked to see F. M., aged 37, a traveling salesman, who had a running ear, which had troubled him for a month, together with a tenderness over the mastoid. Before coming to Drs. Hillis and Thompson an icebag had been applied continuously in the hope of curing the trouble. The left ear was discharging profusely, but the mastoid was not tender,

except slightly over the supposed seat of the artrum. The patient's general condition was poor. He suffered much frontal headache, chilliness with flashes of heat and mental hebetude. The temperature as in intermittent fever. The pulse was slow. The ear was immediately cleansed, dried and filled with dry boric acid powder. A Japanese pocket stove was applied over the mastoid. The general treatment consisted of calomel purge and quinin sulphate grs. 3 every three hours. He was impressed with the gravity of his condition. July 27 found him no better. July 28 the symptoms of mastoiditis were still present, with marked headache, mental dulness, vomiting and rigors.

Operation on the mastoid was proposed and the patient accepted the advice. All the usual preparations were made, and with the assistance of Drs. Hillis, Beasley, Throckmorton and Bartholomew the mastoid process was opened in the usual way. However, we found the antrum located one-half inch above the place where we usually expect to find it. It was filled with pus and cholesteatomatous masses, and the detritus of dead bone. The tegmen was eroded. The bone was thoroughly cleaned out. Then the brain cavity was explored, but no evidences of pus were found. It may be that at the time the abscess was small or the needle of the aspirator did not penetrate it or the needle may have gone clear through it. However, no further efforts were made to find the abscess. The wound was dressed and the patient put to bed at 10:40 a. m.

He did fairly well until August 15. However, in the meantime he still complained of headache. Kenyon's neuralgic tablets gave only a partial relief. In the afternoon of the above date he lapsed mentally, and when I reached his bedside he could only say: "I hope I'll be better, doctor." He thus continued until evening, when he lapsed into unconsciousness. In this condition he was taken to the operating room at 9:40 p. m.

The wound was reopened, and with the assistance of Drs. Thompson, Davidson, Throckmorton and Bartholomew, the wound in the bone was enlarged by the removal of a square inch over the temporosphenoidal lobe. The dura bulged. Inserting a small trocar and attaching the aspirator, we were rewarded by finding pus. This was evacuated to the extent of two ounces. The dura was opened, the cavity cleaned and dried and a drainage tube inserted. The wound was then closed and dressed.

At 11:30 he was put to bed, and at 12:30 a. m. he awoke partially conscious. At 3 a. m. he asked for a drink and was rational at times. When visited in the morning he was partially rational, but his memory for a great many things was gone. He could not remember my name, and could not call the names of close friends or things about the room. He realized his deficiency, and remarked that it was strange that he could not recall the name of things which he saw. Still the burden of his conversation was that he hoped to be better soon. His temperature was normal and his pulse was 74. He complained of no pain in his head. By the 17th he was able to write my name, though he could not call it.

On the 18th his pulse slowed down to 64, with a temperature of 101.6 F. at 11:15 p. m. It continued thus on the 19th. He was dull mentally. At 8 p. m. we concluded to put him on the table again. Examination of the wound showed drainage to be somewhat indirect. The wound was reopened and some more bone removed posteriorly. Then the drainage tube drained directly outward. He was returned to his room at 9:40, with a temperature of 98 F. and a pulse of 80. Since then his recovery has been gradual, but perfect.

The patient manifested marked aphasia. In making up the description of his case I will follow the plan of Bastian, as given in the report of a case similar to mine by Drs. Jack and Walton of Boston.

A.—Preliminary qualifications.

1. Patient is right-handed.
2. No paralysis of face or limbs.
3. He is a traveling salesman, well informed.

- B.—Activity of auditory word center and glossokinesthetic center, with afferent commissural and emissive fibers.
4. Patient deaf on left side only.
 5. Recognizes and appreciates ordinary sounds and noises.
 6. Comprehends simple speech; obeys orders, but does not know names of objects previously familiar.
 7. Spontaneous speech impaired. Uses word "business" when he can not remember real name of object.
 8. Can not name days of week and months of year without coaching.
 9. Can repeat short sentences uttered to him fairly well only.
 10. Has no musical ability.
 11. Has no musical ability to carry a tune.
- C.—Activity of visual word center and cheirokinesthetic center with their afferent commissural and emissive fibers.
12. Sight good.
 13. Recognizes simple printed words.
 14. Recognizes individual letters and numerals.
 - 15 and 16. He can read his own writing after making it.
 17. Recognizes common objects but can not call their names. Calls all alike "business."
 18. Does not recognize gestures.
 19. Writes only fairly well.

language; and it has a number of varieties, in accordance with the particular part of the brain involved and the particular portion of the mechanism of this faculty that is destroyed." Memory, of course, is involved in this process. Nordau in his work on "Degeneration" has beautifully given us the idea that memory is nothing but stored up nerve-cell action. The forms of aphasia are:

1. Word blindness (alexia). The patient can see and spell the letters of a word but can not read.
2. Sign blindness (apraxia), when the subject can not understand the meaning of signs as he once did.
3. Both of these combined make mind blindness, because the patient can not understand what he sees.
4. Word deafness. What the patient hears is, as it were, in a foreign language.
5. Motor aphasia, which is manifested under aphemia, i. e., where the patient knows what he sees but can not express by the organs of articulation what he sees. Our patient had to learn again after a painful process to pronounce the names of common objects around him.

Symptoms.	Mastoiditis.	Brain Abscess.	Lepto- and Pachy-meningitis.	Sinus Thrombosis.
Pain in ear...	Mark'd with swelling of posterior-superior wall of auditory canal.	Usually severe...	...	...
Pain in head...	Mastoid tender to pressure and percussion.	Often frontal and very severe...	Rarely absent; early and severe...	Tenderness over mastoid and sigmoid sinus.
Temperature...	Normal or but slightly elevated	Rarely elevated except in extremis.	Elevated; flushing of face...	Very high; fluctuating markedly.
Pulse...	Normal...	Slow...	Rapid...	Rapid; fluctuating.
Respiration...	Normal...	Slow...	Cheyne-Stokes...	...
Vomiting...	None...	Often present in first stages...	Rarely absent...	In early stages.
Digestive system.	Constipated; tongue may be coated.	Constipation; tongue coated; breath offensive.	Great thirst; loss of appetite; abdomen retracted.	Diarrhea; severe abdominal pain; tongue dry and coated; may simulate typhoid.
Mentality...	Normal...	Cerebration may be slow...	Delirium; irritability; extreme restlessness.	Normal.
Drowsiness...	None...	After week of pain...	Generally present, but not so marked as in sinus thrombosis.	None.
Shivering...	"	Usual	In early stages...	Rigors are very frequent.
Giddiness...	"	Often, especially in cerebellar abscess.	Often observed; retraction of head.	Sometimes observed.
Local rigidities...	"	None; retraction of head in cerebellar abscess.	Often observed; retraction of head.	Convulsions may be local or general
Aphasia...	"	Sometimes present...	None	Not observed.
Coma...	"	In last stages...	In last stages...	In last stages.
Ocular apparatus.	Normal...	Photophobia; pupils contracted; optic neuritis; blindness with dilated pupils in cerebellar abscess.	Pupils sluggish; optic neuritis...	...
Discharge from ear.	Usually purulent.	Often present...	...	Often present.
Emaciation.	None...	Marked; rapid and progressive...	None	May be present.
Pulmonary symptoms.	"	None	None	Often present; due to infarcts; prune-juice expectoration; jugular vein may be involved.

20. Can write his own name, the name of his physician (though he can not call it aloud). Knows location of a physician's office, but can not call his name, though acquainted with him.
 21. Copies well, though he uses word "are" for "or."
 - 22 and 23. Copies numerals and can make calculations.
 - 24, 25 and 26. No tests in reading and writing music.
- D.—The associated activity of three centers with commissures between auditory and visual word centers or other sets of afferent and emissive fibers.
28. Reads perfectly simple words, but not difficult ones.
 29. Can name at sight letters and numerals.
 30. Can not name at sight many common things, such as his victuals.
 31. Can point to common objects whose name he hears.
 32. In writing "A, B, C" he makes "1, 1, 1."
 33. As above.
 34. Can not play musical instruments.
- The patient has made a good recovery. The last defect in writing to disappear was the substitution of the word "are" for "or."

VARIETIES OF APHASIA.

This brings us to a brief study of aphasia. As Dana well says: "Aphasia is a disorder of the faculty of

Motor aphasia is also manifested under agraphia, i. e., where the patient can not use his muscular apparatus in writing what he sees, though again he knows the names of what he sees.

6. Conduction aphasia. The patient can write or speak but is confused in his expression.

7. Then the patient may manifest a combination of the above, and this is called mixed aphasia.

The parts involved in aphasia are:

1. Conductive aphasia—*island of Reil*.
2. True motor aphasia—*Broca's convolution*.
4. Word deafness—*first temporal convolution of left side*.
5. Word blindness—*occipital lobes*.

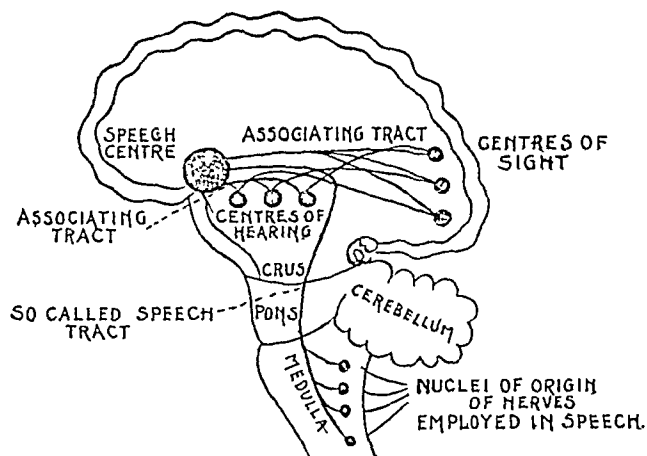
ETIOLOGY.

Consideration of the etiology of brain abscess involves consideration of the anatomy of the temporal bone in its relation to the middle cranial fossa and to the lateral sinus. The plate of bone between the mastoid antrum and cranial fossa is very thin, quite translucent in fact. The plate between the sigmoid sinus and antrum is but a little thicker. Neither is as thick as the external plate of bone. Pus traveling in the direction of

the least resistance, when the aditus ad antrum is closed, or partially so, must involve the brain tissue or lateral sinus before it can erode through the external wall of the antrum, though in several instances the writer has found sinuses from the outside leading into the bone at or near the foramen for the emissary mastoid vein. The tegmen may be in a living state and yet the blood vessels running through it may spread infection to the brain itself. In the involvement of the lateral sinus the purulent matter may erode the bone and infect the sinus thus; the slowness of the blood current in the sinus facilitating the process. When the sinus becomes thrombosed in its whole extent the infection naturally spreads to cerebellum.

PROGNOSIS.

Before the appearance of that classic of MacEwen on "Pyogenic Diseases of the Brain and Spinal Cord" but little was attempted except in a medical way. Patients usually died. MacEwen's experience with cerebral abscess shows that of nineteen cases operated on, eighteen recovered. In thrombosis of the sigmoid sinus of seventeen cases operated on, thirteen recovered and four died. In extradural abscess he lost none of the five cases on which he operated. In the report of seventy-four opera-



tions he had deaths only in the following: five from pyogenic cerebrospinal leptomeningitis, one from abscess of the frontal lobe, one from meningo-encephalitis of the frontal lobe, one from total necrosis of the temperosphenoidal lobe and four from thrombosis of the sigmoid sinus, making only twelve deaths in a disease hitherto regarded fatal. If the surgeon can get the case before the process has extended to the adjacent structures of the mastoid antrum, the operation of opening and cleaning out the mastoid is almost universally successful.

In my own experience it has been my good fortune to have saved all my uncomplicated mastoid cases. In addition to the death above described, the writer has had only three others: two in which the lateral sinus was badly involved and one where the patient died five weeks after the operation with what the consultants and myself agreed to be tubercular meningitis. The patient was a negro with tubercular tendencies.

SYMPTOMS.

The table herewith subjoined gives at a glance comparatively the symptoms of mastoiditis, brain abscess, lepto- and pachy-meningitis and sinus thrombosis. It also gives at a glance the differential diagnosis between the different diseases.

TREATMENT.

This is resolved into preventive and operative treatment.

Preventative treatment consists in treating carefully every case of otitis media which comes under observation. It is for our encouragement that acute purulent otitis media seldom causes mastoiditis. The primary cause of mastoiditis and brain abscess in almost every instance is chronic purulent otitis media, which the patient is too often left to outgrow. This form is dangerous, and, as MacEwen says, "one may just as well go around with a charge of dynamite in his head as with a chronic purulent otitis media."

Operative treatment consists first, in opening and cleaning out the mastoid, and, second, in opening and cleaning out diseased foci in brain and lateral sinus. Dench, in a recent article in THE JOURNAL of the American Medical Association, takes the ground that in a case of doubt an exploratory operation is justifiable. He probably has had the largest experience of any operator in the country. If the tegmen is involved it should be removed, and if the pulse has been slow, with pain in the head and vomiting, a large aspirator needle should be introduced into the brain in various directions. If pus is present the wound is to be enlarged with a bistoury, which may be sufficient, as in a recent case reported by Jack of Boston.

If the lateral sinus be involved, and the symptoms will usually tell, this must be opened and cleaned out, and if the internal jugular be involved, too, it should be ligated.

The after-treatment consists in keeping the patient quiet and on a milk diet. He should stay in bed from four to six weeks and not rise until the brain wound is healed.

Concerning the renewal of dressings, they should not be disturbed oftener than necessary.

THE CHOICE OF A GENERAL ANESTHETIC IN NOSE, THROAT AND EAR OPERATIONS.*

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DENVER.

The choice of a general anesthetic in nose, throat and ear operative cases will depend on the general condition of the patient, the age and the extent of the surgical work required. The anesthetics employed in this line of work are: chloroform, alone or with oxygen, ether, nitrous oxid, alone or combined with oxygen, and ethyl bromid. The systemic conditions which must be considered in using these anesthetics are the same as in other surgical procedures, viz., the condition of the heart, the kidneys, the blood vessels and, locally, conditions in the upper respiratory tract, stenosis of larynx and pulmonary tuberculosis.

In all cases requiring a prolonged narcosis, such as in mastoid operations, operations on the middle ear, certain operations in the nose and nasopharynx, ether is certainly safer and is to be preferred, unless it produces too much irritation in the upper respiratory tract. My experience with chloroform among children has been very satisfactory, they taking the anesthetic easily and quickly. I have found it rarely necessary to employ ether among children. The use of nitrous oxid in children from 3 to 10 years of age, is attended with considerable difficulty, owing to the impossibility of holding the child still and preventing the admixture of air with the gas. It requires from one to two minutes to produce complete anesthesia, which lasts about one minute; when this gas can be administered to the child or adult in cases not requiring

* Read before

Denver A. S. Ar

Medical Society.

over a minute of anesthesia, this anesthetic is most excellent. It may be combined with oxygen to insure greater safety. I frequently use nitrous oxid in operating on the tonsils, incising the ear drum and in perforating the antrum through the nose, the canine fossa or through the alveolus.

The most convenient—and apparently as safe as any of the other anesthetics—is bromid of ethyl. This anesthetic should not be used in prolonged administration; it produces anesthesia in about one minute, lasting from two to five minutes, the patient awakening and almost at once regaining his normal condition. The amount required is from 3i to 3iv, according to age. A proper amount being measured, the whole quantity is thrown on a towel, lint or gauze, or in an inhaler, and placed over the patient's nose and mouth, and only in case of necessity or danger of asphyxiation should air be admitted. When the breathing becomes stertorous, usually about one minute, anesthesia becomes complete. It does not produce spasm of the glottis, resembling chloroform. In adults it requires a larger dose and more time to produce anesthesia. A temporary vasomotor dilatation occurs with this anesthetic, possibly producing more hemorrhage for a few seconds only, but as the effect of the drug is so short, slight hemorrhage is no contra-indication to its use.

Vomiting frequently follows the use of bromid of ethyl, and it should be administered when the stomach is empty. In conclusion, bromid of ethyl must be regarded as a safe anesthetic; the German Surgical Congress, 1897, reports one death in 5,228 narcoses. From the confusing of bromid of ethyl with bromid of ethylene three fatalities are recorded. Bromid of ethylene is highly poisonous and resembles bromid of ethyl very much. Deaths have been reported from the use of impure bromid of ethyl and from asphyxia, syncope and prolonged administration.

The following excellent points are given by A. Brown Kelly,¹ surgeon Victoria Infirmary, Glasgow:

Precautions:

1. Use of pure bromid of ethyl.
2. Attention to patient's respiration.
3. Never prolong narcosis by repeating dose more than two or three times.

Advantages:

- No special apparatus required.
- Narcosis rapidly produced.
- No irritation to respiratory mucous membrane.
- Upright position of patient permissible.
- Rapid regaining of consciousness.
- Invaluable in dispensary work.

In regard to the position of the anesthetized patient, my rule is invariably to operate, placing them on the back, lowering the head so that the level of the pharynx is below the level of the larynx, unless from the nature of the case it is impossible to place them in this position. This position is preferred in our work because there is less danger of blood or severed growths entering the larynx, and it is a safeguard against syncope. Where it is necessary to have the patient in the upright position, or modified upright position, bromid of ethyl is to be preferred as the anesthetic; second choice is given to nitrous oxid, according to the length of anesthesia required.

The advantages of the bromid of ethyl are not generally appreciated by the profession. There are many minor surgical cases which can be operated on by the general surgeon with great satisfaction to himself and little inconvenience to the patient.

1. British Med. Jour., August, 1902.

More "Embalmed" Meat.—A short time ago an Owosso pharmacist ordered 25 pounds of saltpeter from his jobber in Detroit, and received it immediately by fast freight. It was sold to farmers of the neighborhood, who used it in curing meat. Recently so many complaints came in of the aperient properties of the meat that the wholesaler was asked to look into the matter, and it was found that a careless packer had sent epsom salts.—*Pharmaceutical Era.*

THE GIANT MAGNET IN OPHTHALMIC SURGERY.

REPORT OF TWO CASES—REMARKS.*

LEARTUS CONNOR, A.B., M.D.

DETROIT.

The extraction of foreign bodies from the interior of the eyeball presents an infinite variety of problems. These bodies are magnetic or non-magnetic—in this age of steel the magnetic are the rule. Before the use of the magnet extraction was by hooks or forceps and but few eyes were saved, especially if the foreign body was in the vitreous chamber.

The advent of the small magnet rendered extraction of magnetic splinters from the anterior chamber both easier and safer and some pieces were extracted from the vitreous without loss of the eye. The use of magnets or electromagnets as large as possible, introduced by Haab, marked a distinct advance, making it possible to save still more eyes. The usefulness of both small and large magnets has been enlarged by the localizing power of the x-ray and sideroscope.

Haab's paper, read before the Ophthalmic Section of the American Medical Association last June, just ten years after his first publication on the subject, awoke renewed interest in the subject, and showed that his followers in America were both numerous and enthusiastic.

I here report two illustrative cases:

CASE 1.—July 2, 1892, I. D., a vigorous blacksmith, aged 45, applied for treatment of an injury to his right eye received one hour before. This occurred while holding a piece of metal on an anvil, as a fellow workman, with blows from a heavy hammer, molded it into the required shape. He was conscious that something had hit his right eye, stunning him for a moment, and that he could not see as before.

Examination showed vision reduced to the counting of fingers by hemorrhage into the vitreous; the anterior chamber full and clear; a horizontal wound in the cornea extending from the right sclerocorneal junction, one-third the distance to the left. Directly behind was a similar wound in the iris, through which a bit of red reflex could be seen with the ophthalmoscope. The visual field was obscured by a cloudy vitreous so that nothing could be determined in this way as to the location of the steel splinter; nor could any damage to the lens be observed. Looking at these facts in the light of the rule in these cases, it was believed that the splinter had entered the eyeball, through cornea, iris, suspensory ligament and vitreous, thence dropping to the floor of the eyeball. A small magnet of considerable power applied through the route of entrance, gave no indication of the location of the splinter. Regarding the case as suitable for the giant magnet, I availed myself of the courtesy of Dr. Frothingham to use his instrument at Harper Hospital. His aid and that of Dr. Ray Connor at the operation contributed much to its favorable result.

Having anesthetized the cornea with cocain, and placed the patient and magnet so that the point of the latter could be easily approached to the center of the cornea, the instrument was placed in contact with the corneal wound, and the current very slowly turned on till its full power was secured. The result was negative, either as to pain or the appearance of the splinter, though the magnet was kept in contact with the eye for a considerable period.

After a few moments with the full current, the eye was slowly brought toward the point of the instrument, when suddenly a bulging was seen at the lowest part of the iris; a continuance of the current was followed by the rise of the splinter between the lens and iris to near the point of entrance. Here its jagged edges caught in the iris, and though the current was changed in many directions, it failed to effect a disentanglement. A small strabismus hook was introduced through the

* Read before the Detroit Ophthalmic Club.

wound so as to touch the splinter and connected with the magnet, but failed to dislodge it. A large hook was substituted, made to touch the splinter, its point being so directed as to draw the splinter inward and backward. Connecting this with the magnet, and slowly turning on the current, the splinter was seen to attach itself to the point of the hook, leave the iris, and so was readily drawn through the wounds. The splinter measured $3 \times 2 \times \frac{1}{2}$ mm., with very sharp prongs on the end, caught in the iris.

Thus the giant magnet located the splinter on the floor of the vitreous chamber, drew it to the lens, around its lower edge, through the suspensory ligament, up the posterior chamber between the posterior surface of the iris and anterior surface of the lens to near the point of entrance, where it became entangled in the iris. Its release and final delivery through the original point of entrance was effected by the aid of a strabismus hook in properly directing the force of the current.

In all this there was practically no pain or hemorrhage into the anterior chamber.

The after-treatment was atropin, surgical asepsis, hot water applied locally to the eye, and rest. The bruised quadrant of the iris did not dilate for many days, though finally the pupil became nearly round, and the iris normally mobile.

July 4, there was slight circumcorneal injection, a yellowish-white color of the wound, clear lens, dark vitreous chamber; the fingers are easily counted.

The after course of the case was uneventful; no evidence of infection presented, and on July 28 he returned to work. At that time his vision was 8/200; lens still clear; upper and inner part of the fundus showed a red reflex, but the portion of the vitreous chamber through which the splinter traveled still remained opaque though retinal separation was not apparent.

The final result has not been reached, as on September 2 vision was 12/200, and lens clear.

October 7, vision is 12/200, lens with some striated lines, opaque spot in outer part, choroid at place of entrance of splinter.

The operation saved the eyeball in perfectly normal appearance with some sight. The size, location and patency of the wounds made it possible to extract the splinter without making fresh ones and rendered unnecessary the drawing of the splinter over the lens to the pupil in order to pass from the posterior to the anterior chamber, so reducing the peril to capsule and iris.

While exact locating of the splinter by x-ray and sideroscope would have rendered the diagnosis more certain, it is not clear that it would have conduced to a better result. The giant magnet both confirmed the diagnosis of a foreign body in the vitreous chamber and located it on the floor of the same—more could not be desired. It is not denied that it might have been extracted by a small magnet, had it been located by the x-ray, through an opening of the sclerotic, but the damage to the choroid and retina, with increased risk of infection, would have further imperiled the eye.

After the splinter appeared behind the iris it might have been extracted by the small magnet through a new opening of the cornea and iris. This also would have added to existing traumatism of the eye without practical advantage. Clearly from start to finish the giant magnet was the instrument most favorable to the securing of best results.

CASE 2.—A. S., a healthy boy, aged 18; an apprentice in a machine shop, was referred to me on September 27 by Dr. Charles Stockwell of Port Huron. While working, a piece of metal from a hammer hit his right eye, causing a severe shock and instant loss of sight. As the accident occurred but a few hours previous to his visit to me, the wound was fresh.

Examination showed anterior chamber clear; the cornea cut horizontally more than half across, beginning at outer sclero-corneal junction and ending in an upward curve to near the

superior corneal margin; the iris was fully divided beneath; the lens smashed so that it was impossible to see through it, and the patient could only distinguish light from darkness.

Time being limited, he was at once taken to Harper Hospital and operated on by the giant magnet, kindly loaned by Dr. Frothingham, assisted by Dr. Guy L. Connor and the house staff.

The point of the magnet was placed in contact with the inner end of the corneal wound, and the current turned on slowly. After some moments the patient complained of pain; the iris and lens mass at inferior portion of anterior chamber were seen to bulge forward and upward. The splinter had engaged sidewise rather than endwise and was held from advancing by the lens capsule. A change in the direction of the magnetic force freed the splinter, when it flew to the point of the magnet. Meantime the anterior chamber had filled with blood from the damage done by the splinter. The edges of the wound were cleaned, atropin dropped into the conjunctival cul-de-sac, the eye bandaged and the patient returned to his home.

The route of the splinter was clearly through cornea, iris and lens, dropping to floor of vitreous chamber. Thence the magnetic force drew it forward to the lens debris, then upward and outward through openings of iris and cornea. Clearly the giant magnet confirmed the diagnosis and extracted the splinter with least additional injury to the eye.

The splinter measured $6 \times 3 \times 1$ mm., thus explaining the extensive traumatism.

October 6, Dr. Stockwell reported the patient was doing well; had suffered no pain, except on the evening of the 2d, which was easily controlled by the local use of atropin, and an anodyne; the rent in the cornea and iris closed; opaque lens showing in the inner portion of the pupil; tenderness of eyeball, and congestion of conjunctiva disappearing. As nine days have passed since the injury, it may be assumed that danger of infection has vanished, and that we have to deal with the traumatism of the lens and vitreous chamber. The first will either disappear by absorption, or can be removed by operation—the second is still an unknown quantity. It is quite certain that the eye will be retained, and look practically as well as the uninjured eye; it is possible that useful vision may be secured.

From a careful study of these cases the writer is convinced that, without the giant magnet, enucleation would have been imperative in both. With the giant magnet a safe eye is retained in each case, some vision in the first and possibly in the second—a distinct gain over former resources.

The great cost of Haab's magnet has restricted its use, but cheaper substitutes by different operators have multiplied, which, if not equally good, are far better than the small magnets. With an increased demand because of lessened cost, it will not be long ere they will be in the hands of most doing much eye work. With such multiplication will come enlarged experience and greater skill, so that finally they may take the place of the small magnet in all cases that can be brought to hospital or office. Haab says that one magnet suffices for all his cases, and that it is as rational to have a large and small hole for a cat and her kittens as two magnets for different cases.

The technic of extraction of splinters from the vitreous chamber is far from being as simple as might appear. The most experienced are still learning, and beginners do well to heed their suggestions. The great power of the giant magnet renders it capable of irreparable harm if wrongly directed, or infinite good if rightly.

The experimental work, added to the clinical evidence of numerous observers, combines to show that at contact and up to two mm. the power of the small magnet equals, if not surpasses, the giant, but from this distance to 10 mm. the power of the giant increases in almost geometric ratio. From this fact it

is clear that the small magnet is suited only to such cases as admit of its point being brought in direct contact with the splinter, while the remaining cases are clearly within the domain of the giant magnet. Under this view of the case most, if not all, splinters in the vitreous should be extracted with the giant magnet, and not a few in the aqueous chamber.

Experiment and observation show that the farther the magnet is from the splinter the more uniform the action of its force, and the nearer the more jerky such force—the stronger the magnet the more marked this law. It follows that in practice it is wise to either (1) bring the eye close to the magnet point ere starting the current and increase its power very slowly, or (2) bring the eye from a considerable distance toward the point of the magnet with full current very gradually. The jerky force is liable to draw the splinter into the ciliary body, whence it is removed with difficulty, if at all, or it may draw it into some other undesirable location. To rectify this state of the splinter Dr. Kipp has shown us how to utilize the other tip of the magnet to repel the splinter from its misadventure; of course, this calls for a double-ended magnet. In his case the splinter fixed itself firmly in the ciliary body, and no change in direction of the magnetic force would dislodge it. He reversed the pole, when the splinter was released and readily removed. Possibly had this fact been known many failures would have been avoided, as even Haab reports failure from this cause.

When the splinter is caught in the iris one method of its release is given in the first case. Another is the use of the repelling power of the opposite pole. Still another is given by Haab thus: make an opening in the cornea directly over the site of the splinter, then enter with an iris forceps and grasp the iris just beyond the inner edge of the splinter, and gently push it inward till a rent is made in the iris over the splinter. The magnet is now applied at the artificial opening and the fragment extracted. The tear soon heals and the iris regains its normal motility—a far preferable plan to an iridectomy.

Haab so places his magnet that the force shall pass directly through the center of the cornea, expecting the splinter to approach the posterior pole of the lens, curve around its posterior surface, penetrate the suspensory ligament, enter the aqueous chamber, pass between the posterior surface of the iris and anterior surface of lens to the pupillary opening, whence it is extracted by a conveniently located corneal incision. In cases like those reported, where the wound in the cornea is large and freshly made, a new corneal incision is superfluous and the placing of the magnetic current over the fresh wound more desirable. Doubtless other cases will make it desirable to depart from Haab's rule.

A comparison of Haab's results with the small magnet and those with the giant are suggestive. The former are given by Adolph Hurzler, in Morris and Oliver's System of Ophthalmology. Of 18 cases operated on before 1892 by the small magnet, the foreign body was in the vitreous chamber; the splinter was not found in 5 cases; was extracted in 13; vision of $1/7$ was secured in one case; the counting of fingers in 8; most had detachment of the retina; and in 7 the eyes had to be sacrificed. In commenting on this Knapp says that his experience was not quite so bad, as he had obtained perfect sight in a few cases where the foreign body could be seen and extracted soon after entrance.

Since 1892 to June, 1902, Haab reports 165 operations with the giant magnet. Of these 23 failed; 39 eyes were enucleated; 9 had lingering cyclitis; 19 were saved from inflammation, but were sightless. Of 71 cataracts extracted 51 had good vision.

His failure to extract the foreign body he lays to four causes: 1, A firm fixation of the splinter in the posterior wall of the eyeball (emphasis to be placed on the "firm," as in other cases the splinter was extracted from the same location); 2, firm fixation of the splinter in the ciliary body; 3, splinter held by a fibrinous exudate; 4, a splinter healed over in the lapse of months. These are some of the limitations of the giant magnet.

As elsewhere, infection by the penetration of a splinter is fatal to the eye and always a source of anxiety after the removal of the foreign body. Haab, to guard against this, introduces into the eyeball a specially prepared plug of iodoform, as both protective and curative. Most operators content themselves with placing the eye at rest with atropin and the general health in such condition as to best resist infection and promote repair of the damage done thereby.

Since the introduction of the giant magnet the x-ray and sideroscope have increased our power of localization, so making it possible to accomplish far more with the small magnet. They have also advantaged the use of the giant magnet; but it is clear that the latter enables us to do many successful extractions of foreign bodies from the vitreous chamber hitherto impossible.

103 Cass Street.

SOME NEW AND UNUSUAL THERAPEUTIC APPLICATIONS OF ERGOT.*

ALFRED T. LIVINGSTON, M.D.

JAMESTOWN, N. Y.

In Wood's Reference Handbook it is stated that ergot "appears to have been used by the peasantry in some parts of Europe in childbirth as much as three hundred years ago—but its formal introduction into modern medicine is due to the efforts of Dr. Stearns of New York in the early part of the present (nineteenth) century." I quote again from the same source: "The greatest value of ergot in therapeutics depends on its action on the uterus," and "Ergot is also to be recommended in all forms of capillary hemorrhages." This is essentially the ergot-therapy of the books, as well as of general practice to-day, but you will invariably find long dissertations on its poisonous effects, ergotism.

THE AUTHOR'S EARLY EXPERIENCE.

It is almost thirty years since, as assistant physician in the State Lunatic Asylum of Utica, N. Y., I began to use ergot to modify the hyperemia of the brain in insanity, especially in the melancholic class. We there used the drug almost wholly in the form of the fluid extract administered by the mouth, but I remember that I experimented, during my service there, with various preparations which I made to use hypodermically. I can not now recall the other uses to which I put the drug while at Utica; but there must have been others, for I distinctly recollect that one of the first preparations which I made for the practice of my profession in Philadelphia, to which city I removed in the autumn of 1878, was the making of a solution of the Bonjean ergotin for hypodermic use to carry in my pocket.

* Read before the New York County Med. Assn., March 16, 1903.

THE USE OF ERGOT IN CONGESTION OF THE HEAD.

It was thus that I was prepared to meet the demands of a very striking case, which I will relate, because it is from that hour I date my appreciation, which but gradually developed through many years, of the broad therapeutic application of ergot.

I had been in Philadelphia but a few weeks when an emergency call took me to a house on Sansom street, above Tenth, now, I believe, a part of the Jefferson College property. I found a very plethoric old man sitting in a large arm chair, retching violently. I had never before, nor have I since, seen such retching. It appeared that, after a usual supper, he had gone out on the street, but soon returned and began to vomit and from that time until I was called, at 11 o'clock, he had been continuously vomiting or retching. He was so completely exhausted that he did not lean forward or even hold up his head, which lay against the back of the chair. I did not attempt to question him, for he was too much occupied to reply, and, as his housekeeper could give me no further light on the case, I was obliged to draw my conclusions from what I saw; as I learned to do in dealing with the insane. The frontal vein was not a whit less in size than my little finger, and the general engorgement of head and neck I have never seen equaled. His pulse was rapid, full, bounding and hard. Between retchings he murmured but one word, "pain"! From the moment I first saw him I feared there would be a rupture of a blood vessel of the brain before I could relieve the terrible straining. I concluded that whatever the fundamental cause of this tremendous disturbance of the circulation, the present retching and pain were due to vascular engorgement within the head and that the immediate indication was to contract the dilated blood vessels. With this conclusion came the recollection of my ergot, which I began at once to administer hypodermically. I gave it slowly, as I had learned that it was not desirable to inject a syringeful of ergot as suddenly as a hypodermic of morphia is frequently given. As I progressed with the injection, I observed a gradual change in his symptoms, a lessening both of the vascular tension and of the retching. In acute disturbances of the circulation the rapidity of action of ergot is simply astounding. By the time I had emptied the syringe the suffusion had disappeared, the retching had ceased, the pulse was soft and but little accelerated, the patient was quiet and appeared comfortable. The cyclone which had been raging for four hours had passed and there was calm.

The excitement in the household had drawn many people into his room, and I detailed several of the men to undress him and put him in bed. Although there was then no indication for it, as a precaution against being called to him in the night, I gave him another hypodermic of the ergot and left him. The next morning I learned that a few minutes after I left him he fell asleep and slept continuously for six hours.

Two weeks later I was hurriedly called to him in the early morning, and found him in as great mental excitement as his previous physical excitement had been. He had just discovered that his escritoire had been pried open and a wallet containing nearly a thousand dollars had been stolen. He was practically in acute melancholia, wringing his hands, weeping and exclaiming: "Oh, God! oh, God!" in most pitiful fashion. I again applied my ergot as before, and, although it was not magical enough to restore the money, it did, as promptly as before, restore his calm.

EXPLANATION OF ITS SPECIFIC ACTION ON VASCULAR DILATATION.

I had now, within a fortnight, two impressive object lessons on the therapy of ergot, which have remained vivid through these twenty-five years. The first demonstrated that ergot contracts dilated blood vessels; the second demonstrated that ergot subdues an intense nervous excitement and causes it to disappear, although the cause of the excitement remains. My reflections on the latter and my observations of the action of ergot

on many and varied disorders which are usually regarded and treated from the purely nervous standpoint, have led me to conclude that the primary disorder in the mass of nervous conditions is in the circulation in and about those nervous structures whose functional derangements are noted and that therefore the primary indication is not so much nerve foods, nerve tonics, nerve stimulants, nerve sedatives and rest, as it is an equable circulation, a circulation that is in tone in all its parts. The more I deal with nervous conditions the less use I have for phosphorus, nux or strychnia, iron, quinia, opium, the bromids or other depressant salts, and the more use I have for anything and everything that tends to equalize and tone the circulation; a proper activity of the bowels and glands generally, electricity in stimulating the vaso-motor centers and in storing the nervous batteries with the force which is like the nervous force, shock, massage, dry-cupping, exercise, and, above all, ergot, for its specific tonic effect on the circulation, especially on those vessels which are relaxed from lack of sufficient nervous impulse on them, or paralyzed from over-distension and incapable of contracting against this pressure from nervous impulse alone. While ergot contracts the unstriated muscular fiber it certainly acts on those fibers most which most need its aid; otherwise it would not tend to produce equilibrium of the circulation.

I have often observed, when applying galvanism over the cervical sympathetics, that the ears, face and neck, which before treatment were more or less suffused, gradually paled until no vestige of suffusion remained and sometimes pallor supervened. I have frequently produced the same disappearance of suffusion with ergot, but not pallor. The galvanism, stimulating the vaso-motor centers of the head, produced anemia of the vessels of that region if over-supplied; but the ergot produced only general equilibrium because it acts on all dilated vessels wherever they may be. The objection made to ergot, that it raises blood pressure, seems to me unfounded within the limit of rational dosage. If it raises blood pressure in the arteries it is diminished in the veins and capillaries, and when you have secured in any given case an ideal or approximate equilibrium of the circulation, what better result can you desire in that case? In one given case the general blood pressure may be much higher than in another given case, but in any given case, to demand something better than general equilibrium, a proper proportion in each part, seems as superfluous as to request the artist to improve the hue of the lily. Of course, normally, physiologically, there is disturbance of equilibrium of the circulation. Whatever organ or set of organs is now supreme in functional action is receiving more than its usual supply of blood and the rest have a diminished supply. Pathologic activity is quite another thing. If the circulation in the brain is not in good tone functional action is continuously excessive and not well performed. Thoughts are abundant, but not orderly. A confused mass of ideas comes before the perception and it is difficult or impossible to arrange them. If expressed, there is incoherence. Or, inflammation develops, exudation takes place and function ceases. If the circulation in the digestive tract is not in tone, secretion is abnormal in quantity or quality, or both, and the objects of its function are not obtained. If the circulation in a wounded part is not in tone repair is slow or does not occur, or inflammation supervenes with its serious or fatal consequences. All these conditions occur because

of lack of tone in the circulation. Ergot is the one powerful, effective therapeutic measure to secure both equilibrium and tone in the circulation, and this is surely "the great value of ergot in therapeutics" rather than "its action on the uterus." In this respect it has a thousand or ten thousand applications to one demand for it on the womb.

If you ask me how ergot produces its effect on the relaxed unstriated fibers, I must confess that I do not know. I have made no experiments on animals. Every new use which I have made of ergot in my practice was made on analogical reasoning on previous conditions and effects in other subjects. If, in a case of headache, I use galvanism over the cervical sympathetic ganglia, I relieve the headache by stimulating those nervous batteries to a greater activity, which creates more force, which is then distributed over their wires, the vaso-motor nerves, to the muscular tissue of the blood vessels, which then contract. If I give to the same patient with the same sort of headache a hypodermic of ergot, I also relieve the headache with more certainty and more promptly; but there are other effects of a more general character, all-over effects, that are not produced by the galvanism along the neck. Hands and feet become warm, glands are stimulated and their functions better performed; the pulse, if too full, becomes smaller and softer, if too small it becomes fuller; the heart action is slowed and irritability disappears, a general sense of comfort and well-being prevails, the whole system is normalized. I can hardly believe that all this is developed in the brief time solely by the action of ergot on the vaso-motor centers; and I do not hesitate to say that I believe that ergot acts directly from the circulation in which it is being carried. Even the improved activity of the nerve centers themselves may be due to the like correcting of their own blood vessels, for I am convinced that disturbed function in any organ is chiefly due to hyperemia, dilated blood vessels. However, the manner of action of ergot is not to be compared in importance with what it does, and of that I feel more competent to assert.

INSOMNIA.

Associated with many nervous affections, especially insanity and its ally neurasthenia, is insomnia, ordinarily one of the most difficult conditions to meet therapeutically. I believe it is generally accepted that in natural sleep there is a diminished blood supply to the brain, which theory is in harmony with my observations of the action of ergot in insomnia. Ergot is not only the most effective agent in insomnia, but the sleep which follows its administration is the most natural sleep that is produced by any drug. I think this is because it produces most nearly the condition of the circulation which belongs with natural sleep. There is sometimes such irritability of the nervous tissues, as from organic changes, that it is desirable to associate with it some one of the more purely hypnotic class to dull the abnormal sensibility, which reminds me of an incident that occurred many years ago.

HEADACHE.

I was telling the late Dr. Hodge of Philadelphia, a famous obstetrician of his day, my treatment of a case of insanity which he had commended to my care. I said that I was giving her chloral and ergot to help her to sleep. With manifest sarcasm he inquired, "Do you call ergot an hypnotic, Doctor?" "No!" I replied, "I don't call it an hypnotic, but I do call it a mighty efficient aid to an hypnotic." It is probable that the doctor had

never thought of ergot except as related to his specialty. Scores of times patients have fallen asleep in my office after having a hypodermic of ergot to relieve a headache. This also suggests the relation of sleep to a diminished blood supply to the head, for headaches are undoubtedly congestive in the large majority of instances. Indeed, I think an anemia headache very rare, and if I diagnosed such an one I might then give ergot, for there would likely be some part of the circulation hyperemic, the correcting of which would bring a fuller supply of blood to the head. Headache is probably the most common complaint of humanity, and in itself comprises an extensive field for the application of ergot, not only for immediate relief, but to give tone to the cerebral vessels that will prevent recurrences. Chronic and recurrent headaches can be cured by a course of ergot, though in such cases I prefer to use galvanism over the cervical sympathetics in conjunction with hypodermic injections of ergot.

EYE AND EAR DISORDERS.

A common associate symptom with chronic or recurrent headaches is a disordered function of sight, which often leads to the use of glasses, which are frequently changed because the varying conditions of the circulation produce varying states, not only of the retina, but of muscular action on lenses and in iris. In such cases headache is, I think, too frequently attributed to the eye condition, when both are more likely related to a common cause, disordered circulation. Such patients whom I have been treating with ergot to relieve the headache have often remarked on an improvement in vision and a greater comfort in the use of the eyes in sewing, reading, etc. Sometimes, also, a similar relief has occurred from deafness associated with chronic headache. I will relate a case which I treated in Philadelphia seventeen years ago.

A young woman had come to me from Connecticut with a history of eighteen months continuous headache, which, after a few weeks' treatment with ergot and galvanism, was permanently cured. She had a friend at Bryn Mawr, who also suffered from continuous headache, whom she commended to my treatment. This woman was so deaf that I had to yell my questions into her ear and then was not always understood. She never smiled, but had that serious, anxious and constrained expression characteristic of suffering and isolation. After treating her awhile I had noticed that I did not have to speak so loudly to her, but had not mentioned the fact. One day, about a fortnight after I began treatment, she came in smiling and jubilant and exclaimed, "Do you know, Doctor I heard my sister play on the piano yesterday?" It then appeared that she was passionately fond of music, and her sister a fine pianist, but for more than three years she had not heard the tones of the piano. She had been treated three years by a celebrated ear specialist of Philadelphia without benefit and, during the same time, by a neurologist, also without relief. Later, she heard my conversation in ordinary tone and was free from headache between treatments. Because of my removal from Philadelphia I was obliged to discontinue my treatment of this case before complete recovery, but there had been such remarkable improvement within a few weeks, both as to headache and the deafness, that recovery seemed only a matter of further treatment.

I can not say all that I desire to say and relate illustrative cases; otherwise I would be glad to detail other cases of deafness in which ergot relieved by contracting blood vessels, and also to relate other eye cases as iritis, retinitis and optic atrophy, in which ergot or ergot and galvanism effected what eye specialists had not only not accomplished, but had declared could not be accomplished. The relief of pain in iritis has been astonishing.

ingly prompt and lasting. I will be very glad if some ophthalmologist will give ergot a thorough trial in that painful, serious and so largely intractable affection, glaucoma; not simply as to the relief of pain, for I believe it will be found a valuable curative measure.

PAIN IN GENERAL.

For the relief of pain in general, from toothache to headache, you will find ergot surprisingly effectual. The man who exclaimed, "Pain is the cry of a nerve for food!" may have recognized his obligation to poetic license, but, so far as it is figuratively true, it depends on a disordered state of the circulation as the cause of the nerve starvation. A more literally correct dictum as to causation of pain would be: "Pain is the cry of a nerve because big bellied blood vessels are squeezing it too harshly." When a sufficient dose of ergot has brought them to a proper respect for the space they should occupy in the economy the nerve will be comfortable and pain will have departed.

I can not help relating, in this connection, another case which later developed two new and important uses for ergot.

A confrère in my town related the case, seeking my advice as to treatment. He had been called to a young man who was suffering intensely from pain between the eyes. He could find no cause for it, and concluded it was neuralgic and gave morphia hypodermically, but without relief, and finally had to resort to anesthetics, as the fellow was frantic from the pain. I recalled the continuous mucous tract from the nose to the frontal sinuses, and thought the pain might be due to extreme congestion of that membrane in the narrow and confined tract, and advised ergot hypodermically should he have another attack. The doctor smiled incredulously, but, as he did not know what else to do, promised to try it. It was not long before another attack did occur, and when I next met the doctor he remarked, "Well, it was very queer, but the ergot did relieve him at once."

MORPHIN POISONING.

To those who have not used ergot broadly its effect in many cases will seem "very queer" until the rationale of its action is appreciated. I do not pretend to claim that my diagnosis in this case was correct, but I do claim that, in some way, that young man's pain depended on dilated blood vessels.

Later, this subject had another of his peculiar attacks, and his physician not being accessible, another was called, who had not heard the ergot story as related to this case and, as it was a matter of pain, he began giving morphia hypodermically, ineffectually and repeatedly until he had given three and a half grains, when its poisonous effects appeared and the patient was relieved of pain, also of perceptible pulse and pretty nearly of respiration. The family physician was then found, and sometime later I was sent for to bring my battery. I took with me a large Kidder coil and an extra cell. I found the patient on the floor, limp, cold, cyanosed, pulseless, even the heart action not discoverable, and respiration but two per minute. It was a long time before there was any evidence of sensation from even the full strength of the coil and a couple of hours before there was any demonstration of pain. At that time, when the application was suspended, he lapsed into the deep stupor from which no other means used to rouse him brought any response. While continuing to apply the faradism, the question occurred to me, "What is the cause of this universal paralysis?" which I expressed aloud, and, having no response, answered myself: "It must be the great vascular engorgement of the brain." With this thought came the idea of using ergot, which I immediately proposed, and this was assented to by the doctor who had given the morphia, but the family physician objected that, as the patient would die in any case, we gave him a hypodermic the family would be sure we

had killed him. I argued, but in vain. Fortunately the family physician soon after remembered an obstetric appointment, and as soon as he left I gave a hypodermic of ergot, with the result that in a brief time the patient, without other means being used to rouse him, sat up awake and clear and conversed with us and did not again relapse.

APPENDICITIS.

A few months after the morphia incident I was called to this same subject, and found him in a high fever, with extremely rapid pulse and the local symptoms of appendicitis. The local pain was so great that he screamed in his agony. The pulse was so rapid that I could only estimate it as about 180. Recognizing the congestive element, I gave him ergot hypodermically, which relieved the pain in a few minutes, and the pulse dropped to 120. When the pain returned the same treatment had the same result. Thinking the case might demand surgical interference, and preferring to share the responsibility, I called Dr. Roswell Park, of Buffalo, who diagnosed appendicitis, but not yet at the stage for operating. The day that Dr. Park was called the patient and his friends believed him to be dying. A clergyman was called from his pulpit, the good-bys were said by the family, and the patient directed as to the postmortem rites. I continued, however, with my ergot, the patient recovered within a fortnight, and I have not known of his having any illness during the nearly eleven years that have intervened.

OPIUM POISONING.

Here are three utterly distinct conditions, all extreme, in the same subject, having but one common element, vascular dilatation, in the relief of which one drug, ergot, was clearly the effective factor. I have not had an opportunity since the case related to test ergot in opium poisoning, but it would certainly be my first resort were I called to such a case, and I would be grateful to anyone who may have opportunity, if he will try it. I would give one syringe of after another of the solution which I shall describe, giving each one slowly (or, as there is usually a multiplicity of doctors, two might be given at the same time, which would hasten absorption) until there was marked improvement in the circulation, even if it required half a dozen or more syringes to accomplish it. I am confident that you may safely rely on this measure alone, except that if the drug was swallowed the stomach should be cleansed.

DRUG HABITS.

I have used ergot for nearly twenty-five years in the treatment of the habit cases, both opiate and alcoholic, and believe it to be by all odds the best treatment, not even excepting the "gold cure." I always immediately and wholly discontinue the habit drug and substitute no other. It may possibly be easier, both for doctor and patient, to gradually reduce the quantity for a few days, giving ergot four to six times a day as a preparation for the final total discontinuance; but I have preferred, as a desirable moral element, to demonstrate to the habitué that neither his habit-narcotic nor any other is necessary to him in any degree. If, in the case of opium addiction, the drug is immediately and wholly discontinued without previous preparation by the ergot, the reaction that occurs during the twenty-four hours following the first twenty-four or thirty-six hours of abstinence is sometimes so appalling that it requires as much moral force on the part of the physician to do his duty as any other situation in which he is placed. He is quite likely to think more of the condition which confronts him than the theory he started to demonstrate; yet, I assure him, he may hold to his theory if he does not forget his hypodermic and his solution of ergot. After that critical twenty-four hours the treatment is easy.

DELIRIUM TREMENS.

In delirium tremens ergot is *the* remedy to calm the mental and physical excitement. A man was brought into my office in such physical and mental agitation that it was with difficulty that I gave the first hypodermic of ergot, and he left the office within an hour as calm and rational as anyone before me. No other drug will so promptly set a man on his feet after a debauch, or so thoroughly clear the head and put one "in condition" after a night's dissipation; and, in the graver sequels of prolonged alcoholic hyperemia of nerve centers, such as paralysis and coma from the pressure of exudates, you will be most agreeably surprised, to put it mildly, at the results of a few hypodermics of ergot. Indeed, to correct the conditions which produce exudation in general and to secure the absorption of the exudates, from simple edema of the feet to serious apoplexy, you can not do better than to give ergot by hypodermic injection. Please treat your next case of edema of the larynx in this manner.

ASTHMA AND OTHER SPASMS.

Since reading the Chautauqua paper, I have been asked as to the danger of producing spasm of sphincters or bladder. In an experience of more than 25,000 hypodermic injections of ergot, in some instances having given ten ordinary syringefuls in twenty-four hours (the equivalent of one-half dram of Squibbs' solid extract, or two and one-half drams of the powdered ergot), I have never observed any such effect; and not more than half a dozen times have I produced spasm of the womb from giving a little too much ergot during the menstrual activity. Considering the cause of spasm in general, which is either irritation from dilated blood vessels in motor centers or peripheral irritation of sensory terminals from the same cause, reflected through motor centers to the muscles involved, ergot would appear to be indicated rather than contra-indicated in spasm. I know that in many spasmodic or convulsion conditions ergot is beautifully effectual in relieving. Asthma has yielded in a few minutes to ergot, even when the attack has been extreme and prolonged; and many cases of uremic convulsions have been as promptly relieved by ergot. When I speak of using ergot, I always mean hypodermically, as I have no confidence in its desired action when administered by the mouth, which is often, also, offensive to the stomach. The two methods are not to be compared as to their desirable results.

PUERPERAL ECLAMPSIA.

Obstetrics is out of my sphere of practice, and I have had no opportunity to demonstrate the applicability of ergot to puerperal eclampsia, but, considering its essentially-like causation to that of uremic convulsions from toxins, which disturb the circulation in nerve centers as well as the probable inefficient glandular activity in eliminating those poisons, I do not hesitate to commend its trial in that affection, believing that happy results will be obtained. Doubtless many will hesitate to give ergot to the pregnant woman, but I have frequently so used it without ill results, and I have had the assurance of a celebrated gynecologist that he would use it in pregnancy if indicated. In the convulsions occurring before or during labor, I would use it cautiously, but after the womb is emptied, I would use it freely and would expect to see brilliant results.

HYSTERO-EPILEPSY, CHOREA, ETC.

Had I time, I would relate a striking case of hystero-epilepsy of considerable duration who, during the convulsions, required half a dozen men to hold him in bed

and who was practically cured from the first hypodermic, no further convulsions occurring. In the same way, I have relieved ordinary hysterical convulsions in a few minutes. The cataleptic hysteric is a typical case for the administration of ergot. With ergot you will cure the acute choreic promptly instead of waiting weeks and months, perhaps vainly, for the action of tonics and nerve sedatives. The old chronic choreic as well as the chronic sufferer from paralysis agitans you will not promptly cure, but you will promptly benefit and accomplish more with ergot than with any other drug. In infantile convulsions and paralyzes and in the night terrors of children I earnestly commend to you the use of ergot, but I also commend the careful inspection of prepuce and clitoris and the correcting of their abnormalities. Indeed, in all convulsive and nervous conditions not clearly related to toxic influence examine carefully the sexual and pelvic organs for primary causative irritation, after which consider the digestive tract.

In epilepsy you will have all the advantages from the use of ergot that you have had from the bromids, without the latter's tremendous disadvantages.

BULBAR PARALYSIS, PARESIS, ETC.

As illustrative of the successful use of ergot in a condition regarded as incurable, I will relate another case.

Ten years ago a man came to me to have the galvanocautery used on the back of his neck. He said, in effect, that he had consulted neurologists in Buffalo and New York, who had agreed that he had a fatal disorder, bulbar paralysis. The New York specialist exhibited great interest in his case as a rarity, and assured him that his was a beautiful case, but that all such cases progressed to fatality, though, possibly, cauterization might give him some temporary relief or extenuation of life. I saw that the poor fellow was frightened almost to death and, while he was not there to consult me, humanity led me to attempt to modify the influence of the unfavorable prognoses and to say that I thought that some other treatment would be much more beneficial than what he came for. He was in a state of mind to grasp at straws and requested me to treat him. I do not answer for the diagnoses, but they were made by those whom I regarded as more competent than myself. My own judgment was rather that he was developing general paresis. However, I treated him thoroughly with ergot and galvanism and he had no other treatment except buckthorn as a laxative. He made a rapid recovery, and has been in good health since and active as a public speaker.

I have had well-established cases of general paresis so improved by ergot that I questioned the correctness of my diagnosis, and I believe that if paresis could be so treated in the early stage it might be cured.

ACUTE INFLAMMATIONS.

Another class of diseases should be considered in relation to ergot, the acute inflammatory. It is surely rational to assume that ergot is indicated here, for the central element is dilated blood vessels, and ergot does contract the dilated blood vessels. But, better than theory is demonstration, and I have repeatedly demonstrated its value in meningitis, pneumonia, peritonitis, appendicitis, metritis, tonsillitis, erysipelas, erythema and inflammation of veins and arteries. The nearer to the initiation of inflammatory states you apply ergot, the more beautiful will be the demonstration of its effective action. I have also used it largely in the zymotic diseases to control or modify local hyperemia, which give pain and discomfort. I know that it is possible to make even the very sick comfortable, and there is some satisfaction in being comfortably sick. The sequellæ of influenza, the most serious part of that disease, local passive

congestion in one or more vital organs from paresis of vaso-motor centers, are relieved by ergot, though often slowly, as the influenzic poison has a peculiarly persistent depressing action on the sympathetic ganglia, but persistent use of ergot will overcome this.

TYPHOID FEVER.

I will be very grateful if some of you gentlemen who frequently treat typhoid fever will use ergot from the beginning. I am sure that by it you will accomplish several desirable results; limiting the local inflammation that so often leads to hemorrhages and perforation, the fatal elements of the disease, securing better elimination of the septic contents of the bowel by stimulating its muscular coat, preventing the head symptoms by holding the circulation there in tone and, by its effect on the general circulation, relieving the work of the heart.

ANGINA PECTORIS AND OTHER HEART AFFECTIONS.

There is still another class of disorders in which ergot stands pre-eminent as a means of relief—I refer to all those conditions, whether in kidneys, liver, lungs, brain or digestive tract, which produce functional and sometimes, later, organic trouble in the heart. It appears to me that quite too much attention is given to the heart in many cases and not enough to the conditions that have produced and are producing the symptoms in the heart. In general, the heart symptoms themselves and the remote states of disturbed circulation which produce them will be more effectually corrected by ergot than by any other drug of the *materia medica*. To use a pertinent slang expression, "It makes me tired," as the practice makes the poor hearts of the subjects so treated, when I think of the prodding and spurring of that overwrought organ by all the heart tonics and heart stimulants the doctors can think of, or, in other cases, lowering its force by sedatives and depressants, when the real indication is to remove the conditions which are overworking it or the conditions which are irritating its motor center; in other words, securing as promptly as possible approximate equilibrium of the circulation, to which end ergot is the desideratum. To this end I declare ergot to be tenfold more valuable and efficient than all the heart tonics, heart stimulants and heart sedatives combined. Do not understand me as condemning these classes of medicaments. I am only condemning their improper use. A disorder associated with what I have been saying is angina pectoris, in which I have used ergot with the happiest results. I recently heard a paper on that subject by a prominent practitioner personally known to many of you. I was asked to take a part in the discussion, and commended ergot. The physician promptly replied that "of all drugs, that one was most contraindicated." I will only say that if in angina pectoris or any other affection you deem it undesirable to make the labor of the heart as easy as possible by removing barriers that it can not surmount and lifting loads that have fatigued it, or undesirable to calm excited nerve centers that have made its action tumultuous and straining, then do not give ergot, for it is surely then contraindicated.

PRELIMINARY TO OPERATION.

I will detain you with but one more suggestion as to the therapy of ergot, which leads me into a field whose workers are not much given to the use of medicaments. And yet I am convinced that this one drug will be found by the surgeon who fairly tests it in his practice as valuable and necessary for the purposes which I shall point out as anesthetics or antiseptics for their especial

purposes, and more valuable to him than any other drug outside of those classes.

The present era of surgery is the most brilliant of all history, so brilliant that the mind that contemplates it is dazzled as the eyes are dazzled by looking at the sun. The foundation on which this grand superstructure has been builded is antiseptics, the destruction of those microscopic organisms whose presence in wounds produces inflammation, which has always been the Waterloo of surgery. It is no disparagement to modern surgery to recall that before the day of antiseptics the surgeon was not always defeated; that, indeed, his victories were counted by the thousands and tens of thousands; and why? We surely can not assume that the bacterium did not then exist, any more than we can assume that the mass of mankind who do not develop tuberculosis are never exposed to its bacterium. There was in those successful cases a condition that prevented the fatal activity of the bacteria. I believe that the explanation is to be found in the state of the circulation. Inflammation can only follow congestion, and congestion can only occur when the walls of the blood vessels in the injured or wounded part have not sufficient tone. Where there is not that sufficient tone ergot will develop it, and this is the function and province of ergot in surgery. In all cases where there is time and opportunity to prepare a subject for operation by a preliminary course of ergot it should be done as carefully and conscientiously as you would secure the most perfect antiseptics during and following the operation. When the subject can not be so prepared in advance, the administration of ergot should be made hypodermically before and during anesthesia and operation and afterward until the healing is complete. You will find that the subject who has had a proper preliminary preparation by ergot for operation will have little or none of those distressing and often seriously objectionable accompaniments and sequellæ of anesthesia, nausea, retching, vomiting and delirium; and fluid nutriment may be safely given, as a rule, within a couple of hours after operation and at intervals thereafter.

SHOCK.

That great immediate dread of the surgeon, shock, will also be wholly prevented or greatly modified; and in those cases in which shock has preceded the surgeon's relation, ergot will quickly prepare the subject for prompt and safe operation, when delay or the imposing of operative shock on the previously shocked nervous centers would be fatal. Pain, for which the surgeon is accustomed to administer morphia, a drug that congests and disturbs every vital function, will be prevented by keeping the circulation under the influence of ergot, for it is congestion which determines the pain. Thus morphia may be avoided, which is always desirable; but if it must be administered, combine it with plenty of ergot to prevent its undesirable effects. After operation the thing desired is repair, and the sooner it is accomplished the better for the surgeon's reputation and the patient's satisfaction and future usefulness.

When you read in the evening paper: "Mr. John Jones was operated on to-day at the Blank Hospital by the famous Dr. Blank. The operation was successful." And, a few days later, you discover Mr. John Jones' name in the obituary column, it means that there is something more to be desired than surgical skill and the bacterial destroyer. That desirable thing is a proper activity of the circulation in general and, in particular, in the region of the operation. That proper activity is only

secured by a certain caliber of the vessels which carry to and from that region the nutritive fluid, and I feel that the most important message which I bear to you tonight is that ergot will, more surely and effectually than any other means, determine that proper caliber; whether for repair of a wound after operation or for aborting or minimizing an acute inflammation, or for raising the blockade that has wearied or exhausted the heart, or for relieving a coma or paralysis or convulsion, or for promoting the absorption of exudates, or for restoring normal function in an organ, or for calming an excited nerve center, or for relieving pain, or for simply restoring that general equilibrium of the circulation which warms the cold hands and feet, cools the hot brain and brings to an unhappy mortal, calm, comfort and peace.

Now, as a stranger to you, and without the weight of that bubble, reputation, to impress my words on you, I will confess that I do not expect you to accept now, nor until you have made the demonstrations for yourselves, all the claims I have made for ergot. I know that much of what I have said is novel to the mass of the medical profession and, in the developing of the application of ergot to disease, I have often scarcely credited my own senses, so astonishing was its action. I know, too, that a widespread prejudice exists against ergot; that it is regarded by many as a criminal among drugs. Patients of mine traveling abroad have been unable to purchase it in some countries of Europe, being told that it was a rank poison, and many physicians in this country have expressed the same view. At the sacrifice of conventional form in medical literature, I have endeavored to impress on you more strikingly the facts I had to present, the theories I wished to express. If I have so far succeeded in awakening your interest in ergot as to lead you to a wide and widening practical application of this efficient and remarkable drug, my mission tonight will have been attained. How you may regard me, concerns few beside ourselves. How you may regard ergot, vastly concerns thousands whose lives and futures will be placed in your hands in the years to come. You may have been impressed that I have a kaleidoscopic view of ergot or that it is to me like a musical instrument, a harp of a thousand strings, on which I play many tunes. If you will analyze all that I have said, you will find but one chord, one string, that makes, like Paganini's, many tones; which, unlike Paganini's, are harsh and inharmonious, unhealthful. All that is novel in the broad therapeutic application of ergot is the recognition of the varied, unhealthful tones of that one chord in all the diseases I have mentioned. That chord is *abnormally dilated blood vessels*. Ergot is the master hand whose magical touch vibrates them to harmony and health.

THE MODE OF PREPARATION AND OF USE.

Since the publication of the Chautauqua paper I have had so many inquiries as to the preparation I use, dose, method of administering, etc., that I will anticipate such inquiries in relation to this paper. I have experimented with a great many solutions which I have made, the object of which was to find that antiseptic which would best preserve a watery solution from bacterial development, toward which there is a great tendency in ergot, and to avoid the pain in introducing it hypodermically, and to prevent local congestion or inflammation at the region of application. I discarded three classes of antiseptics, the mercurial, from the great irritation; the iodine group, because of their tendency to set free the iodine, and the carbolic acid group, because of the tendency to produce a turbid state, a suspension of a fine precipitate which

filtration would not correct. I have also experimented with every preparation of ergot to which my attention has been called, only to discard all except the preparation of aseptic ergot, which is put up in tiny bottles, hermetically sealed, each containing one ordinary dose. This solution is the most satisfactory of all the preparations I have experimented with except my own solution, and I do not hesitate to recommend it. However, I prefer this solution:

Squibbs' extract of ergot 1 drachm, dissolved in solution formalin (1/3000) one ounce. Mix.

The distilled water should be boiled to sterilize, and, after cooling, the formalin added before the ergot is dissolved. The solution should then be filtered. You should not allow yourself to get out of this solution, for, curiously, a solution that has been made a few days is more satisfactory to the patient, giving less hurt, than one freshly made. Until the last two years I purchased the ounce or 25 gram jars of Squibbs' extract, but I much prefer, as being less troublesome and being always surely aseptic, the drachm packages wrapped in tinfoil, which my friend, Dr. E. H. Squibb, has been preparing for me. In making the solution great care should be taken to have everything used in the process thoroughly sterilized. It is better to keep in a cool place and protected what you do not carry with you. I regard the syringe used and the care of the needles as important. The best syringe is a glass one with asbestos plunger. As avoiding trouble in refilling, I prefer a syringe that holds a drachm or more. I always scour the needles, after each use, with sapolio, having filled the syringe with distilled water, which I throw through the needle slowly and continuously while drawing it from base to point between thumb and finger, which holds some powdered sapolio, then rinse well and dry with tissue paper outside and the inside as well by screwing the needle on a cone of the tissue paper, afterwards wrapping each needle in a bit of tissue paper, which sufficiently protects it.

A minimum effective dose, for an adult, of this solution, I would regard as 15 minims, but I seldom give less than an ordinary hypodermic syringe-ful, 25 or 30 minims, and often two such syringe-fuls. In extreme cases, as uremic convulsions, I have given four such syringe-fuls. One syringe-ful will generally relieve even a bad headache, but if not relieved in half an hour, repeat the dose.

It is always well to continue to use ergot, where there is a congestive tendency, for some time after symptoms have disappeared. The largest quantity of ergot that I have given in twenty-four hours is ten ordinary syringe-fuls.

As to the place of application, I prefer the deltoid of the left arm. It seems better to inject into muscle, but the space between the scapulae is a good one to inject under the skin. Unless there is good tone in the blood vessels where it is injected, ergot will cause some congestion and sense of soreness until a few doses have improved the tone of the circulation, after which the patient will not mind the injections. Sometimes it would be a good precaution and never out of place to especially cleanse the skin where the needle is to be inserted.

I have never had an abscess purely from ergot, not a half dozen in all my experience, and those clearly explicable, as from an associated irritant. Always inject ergot slowly, keeping the finger on the stem of the

plunger and against the base of the syringe, to avoid suddenly throwing in too rapidly because of irregularities in the bore of the syringe or inequalities of pressure.

Finally, as to ill effects in general and, in particular, that dreadful sequence, ergotism, I am reminded of a celebrated chapter, whose title and text I will quote:

"On Snakes in Ireland.
There are no snakes in Ireland."

I have had a large experience with ergot, and I have never seen a suggestion of ergotism, nor any other effect that I could denominate ill. If you are looking for "snakes" in ergot, you must search elsewhere than in Squibbs' tinfoiled lozenges, and I think you will fail to find them lurking in the tiny bottles of aseptic ergot.

With a proper solution and the syringe and needle sterile, use ergot freely until you have secured the desired effects, and do not lie awake at night in dread of "snakes" in ergot.

DISCUSSION.

DR. F. H. WIGGIN, New York, said he could corroborate many of the statements made in the paper. His first trial of ergot was in a case of very dangerous intestinal paresis following a difficult laparotomy. The patient received ten syringefuls in 24 hours and was greatly benefited thereby. Administration continued on signs of relapse and recovery was uneventful thereafter. The drug was also useful in controlling nausea following anesthetic. The pain of acute articular rheumatism and also the morphin habit were controlled by it.

DR. O. W. S. TOMS, Nyack, N. Y., described a severe case of acute pulmonary edema which had yielded most satisfactorily to two syringefuls of Squibb's ergot solution. The attack had been brought on by disturbed compensation of the heart. Another interesting case reported in detail was one of severe purpura associated with rheumatoid and neuralgic pains and hemorrhages from the bowel. There were recurrences of eruption each time the patient came out of the influence of morphin. Finally ergot was given hypodermically with remarkably good results. Two injections were given daily for a few days. After each administration the rash became dark and was quite pale by the next day.

DR. CHARLES PHELPS, New York, had found ergot very useful in arteriosclerosis, and believed it should prove of value in cases of cerebral contusion.

DR. WILLIS E. FORD, Utica, N. Y., said that even though some of the claims made in the paper seemed hard to believe they should be accepted with confidence, for he could personally vouch for Dr. Livingston's experience and diagnostic ability in the field of neurology. He had found ergot useful in subinvolution and chronic metritis responsible for failure of lactation. It was difficult to believe that this drug could take the place of well-known heart tonics and stimulants, but if it were so ergot would certainly assume a new prominence.

DR. ALEXANDER LAMBERT, New York, said he had recently made an extensive trial of ergot. The first case was a desperate one of angina pectoris, in which the usual remedies had utterly failed. In 10 minutes after the first injection of ergot he was completely relieved, and this experience was duplicated in several subsequent attacks. In a case of opium poisoning the use of ergot had permanently restored the patient to consciousness. A most interesting experience had been with 10 cases of alcoholic wet brain in Bellevue Hospital. Formerly under the most approved treatment this class of cases had yielded a mortality of 95 per cent., but in the present series, treated by ergot in doses of 15 minims every 2 hours, 7 cases out of 10 recovered. Ergot was also of greatest value in relieving the depression and tremor of ordinary acute alcoholisms. He had used ergot also in several cases of severe alcoholic pneumonia and in pulmonary congestion and edema with the most satisfactory results. One case of surgical shock was reported in which ergot had controlled severe shock promptly

and had enabled an urgent operation to be done successfully.

DR. EDWARD W. LEE, New York, said that for many years he had used ergot with apparent benefit in chronic hypertrophy of prostate and in acute inflammation of this gland.

DR. LIVINGSTON, in closing the discussion, said he had used ergot in cases of concussion of brain with decided benefit.

Special Article.

THE TYPHOID EPIDEMIC AT ITHACA.*

(By Our Special Commissioner.)

I.

The city of Ithaca is most attractively situated in central New York at the upper end of Lake Cayuga, about one thousand feet above the sea level. The location and surroundings suggest unusual healthfulness, and, with a single exception, to be noted presently, there has been, up to the present year, no markedly excessive prevalence of disease. According to the United States Census for 1900 the death rate for that year was only 16.3. The town is reported as having 194 manufacturing establishments with an aggregate capital of \$3,000,000, but it is chiefly celebrated for being the seat of Cornell University, and is pre-eminently a college community. During the college year the student population constitutes nearly one-fifth of the total number of inhabitants.¹

In the matter of general cleanliness and attention to garbage disposal and other sanitary details, Ithaca does not impress one as being any more lax than scores of similar communities. Indeed, it is probably considerably superior to most non-college towns of its size and surroundings, and so far as appears, there has been only a single indication that Ithaca was not an unusually healthful community.

PREVALENCE OF TYPHOID FEVER IN FORMER YEARS.

For many years prior to the present outbreak typhoid fever, or a disease closely resembling it, so far from being an uncommon disease in Ithaca, has been rarely absent. A low type of fever, deemed by some so peculiar to the town that it has been honored by the designation of "Ithaca fever" (save the mark!) has occurred with varying severity for years. In the year preceding the present epidemic, cases of "Ithaca fever" and kindred illnesses appear to have been especially numerous. According to the official record of the university infirmary, "eighteen cases of typhoid and enteric fever, some of them very severe," were cared for in that institution during the year 1901-02. I have found that not infrequent mention of cases of typhoid fever occur in the files of a local newspaper during the months of January and February, 1902, and it is well known among the Ithaca physicians and some of the townspeople that a considerable number of cases of "fever" occurred at that time. In

* It is to be understood that the matter appearing last week was merely a preliminary statement based on information then obtainable.

1. Population, U. S. Census, 1900, 13,136. The number of students recorded in the University Register at the beginning of the year 1902-03 was 2,686, but 165 of these were residents of Ithaca and are probably included in the census enumeration.

the opinion of some who have investigated the matter, the number of such cases should be placed as high as one hundred. In one of the earliest notices of the present epidemic² a comparison was drawn between "the epidemic of this year and last."

BEGINNING OF PRESENT EPIDEMIC.

As far as the facts can be obtained regarding the time of onset of the present outbreak, it appears that about fourteen cases of a low fever, possibly typhoid, occurred between Nov. 17, 1902, and Jan. 15, 1903. Then, on January 1, some five or six cases of fever developed, and during the following week several cases each day were reported. After January 25 the number of cases reported daily seems to have increased very materially, and the existence of a serious epidemic began to be admitted, although most unwillingly. Some general uneasiness, however, seems to have been felt as early as January 22. On that date one of the Ithaca papers³ contained the following editorial note:

Boil the drinking water. Reports from physicians show that there are several cases of typhoid fever in the city. Impure drinking water is one of the most fruitful sources of typhoid infection. If you would take no risk, carefully prepare every drop of water you drink.

On the day preceding this statement, the same paper contained a note on typhoid fever in Philadelphia with the following somewhat pragmatical comment, which, in the light of subsequent events, reads rather curiously:

The cause of the epidemic in Philadelphia is attributed to a poor water supply, and Ithacans who visit the Pennsylvania metropolis should be careful about what they drink. It is a safe rule never to drink water at any time unless perfectly sure of its purity.

By February 2 the gravity of the situation in Ithaca had become clearly manifest. On that day the following statement was made in the local press:

The epidemic of typhoid fever is spreading with terrible rapidity throughout the city. The physicians are over-worked, the hospitals are over-crowded, nurses are lacking to care for the sick, and two deaths have been caused by the disease, one Saturday and one to-day.

DIMENSIONS OF EPIDEMIC, NUMBER OF CASES AND DEATHS.

It is unfortunately impossible to obtain precise information regarding the time of beginning of the outbreak, the sequence of the cases and the dimensions of the whole epidemic. The records of the local health board are in a confessedly fragmentary and imperfect condition, and the actual number of cases occurring in Ithaca during the early months of 1903 will probably never be known. I am informed by Dr. G. H. Soper, the representative of the New York State Board of Health, that he had secured a record of 770 cases that had developed prior to March 12. This, however, is generally believed by Dr. Soper and others, who have firsthand knowledge of the epidemic, to fall somewhat below the truth. Just how far below is a matter for conjecture. Some observers would place the number of cases at over one thousand, and lay great stress on the existence of a

large number of ambulant cases, but it must be remembered that a number of such cases occur during every typhoid epidemic, and there seems to be nothing to indicate that the Ithaca infection has given rise to a disproportionately large number of cases escaping the notice of physicians.

Among the students in Cornell University the epidemic has found many victims. The university authorities had, on March 12, a record of 119 cases with 12 deaths, that had occurred among the students remaining in Ithaca; and of 46 cases and 10 deaths reported from among those students who had gone from Ithaca to their respective homes. It is estimated that at least one-third of the total number of students left Ithaca after the outbreak of the fever, so that the 46 cases reported to the university authorities constitute only a fraction of the number in whom the disease developed outside of the city. The writer has obtained, in fact, the names of eighteen students not on the university lists who are reported as ill at their homes from typhoid fever contracted in Ithaca. From the files of local newspapers have also been obtained the names of seventeen persons who are believed on strong grounds to have contracted typhoid fever in Ithaca, but who developed the disease outside the town, for the most part in neighboring villages. One case, however, presumably contracted in Ithaca, has appeared as far away as Wheatland, South Dakota. From the best information obtainable, therefore, the number of cases that can fairly be attributed to infection in Ithaca, between January 1 and March 12 is as follows:

	Students.	Citizens.	Total.
Cases in Ithaca.....	119	651	770
Cases outside of Ithaca.....	64	17	81
Totals	183	668	851

The record of deaths, although doubtless incomplete, probably presents a narrower margin of error than the cases.

TABLE I.
DEATHS FROM TYPHOID FEVER ATTRIBUTABLE TO INFECTION IN ITHACA.⁴

Jan. 23....	1	Feb. 14....	1	Feb. 28....	3
Feb. 1....	1	Feb. 15....	4	March 2....	3
Feb. 2....	2	Feb. 17....	3	March 3....	1
Feb. 4....	1	Feb. 18....	1	March 4....	1
Feb. 6....	1	Feb. 20....	1	March 7....	2
Feb. 7....	1	Feb. 21....	1	March 11....	2
Feb. 8....	1	Feb. 22....	5	March 12....	1
Feb. 10....	1	Feb. 23....	2	March 13....	2
Feb. 12....	2	Feb. 25....	2	March 14....	1
Feb. 13....	2	Feb. 27....	2	Total	51

SAME RECORD, BY WEEKS.

Jan. 23 to Jan. 29.....	1
Jan. 30 to Feb. 5.....	4
Feb. 6 to Feb. 12.....	6
Feb. 13 to Feb. 19.....	11
Feb. 20 to Feb. 26.....	11
Feb. 26 to March 5.....	10
March 6 to March 12.....	5

For reasons already stated definite information can not be obtained regarding the sequence of cases in the whole population. The facts are at hand, however, concerning the dates at which some 97 Cornell students were admitted to the university infirmary and its annexes, and these afford probably as reliable information as can be secured regarding sequence.

4. Including 12 students who contracted the disease in Ithaca, but died at their homes.

2. Ithaca Daily News, Jan. 26, 1903.

3. Daily News, Jan. 22, 1903.

TABLE II.⁵

CASES OF TYPHOID FEVER OCCURRING AMONG CORNELL STUDENTS IN ITHACA, THE DATE OF INCEPTION OF WHICH IS APPROXIMATELY KNOWN.

Jan. 23.. 1	Feb. 4.. 5	Feb. 16.. 1	Feb. 28.. 1
Jan. 24.. 2	Feb. 5.. 5	Feb. 17.. 2	Mch. 1.. 0
Jan. 25.. 3	Feb. 6.. 11	Feb. 18.. 1	Mch. 2.. 2
Jan. 26.. 2	Feb. 7.. 3	Feb. 19.. 0	Mch. 3.. 0
Jan. 27.. 1	Feb. 8.. 1	Feb. 20.. 1	Mch. 4.. 0
Jan. 28.. 3	Feb. 9.. 4	Feb. 21.. 2	Mch. 5.. 0
Jan. 29.. 4	Feb. 10.. 4	Feb. 22.. 2	Mch. 6.. 0
Jan. 30.. 1	Feb. 11.. 4	Feb. 23.. 1	Mch. 7.. 0
Jan. 31.. 5	Feb. 12.. 0	Feb. 24.. 1	Mch. 8.. 0
Feb. 1.. 5	Feb. 13.. 2	Feb. 25.. 4	Mch. 9.. 0
Feb. 2.. 3	Feb. 14.. 0	Feb. 26.. 0	Mch. 10.. 4
Feb. 3.. 3	Feb. 15.. 1	Feb. 27.. 1	Mch. 11.. 1

In addition to this number, 22 students have been ill in lodgings or in the city hospitals, the date of the beginning of their cases being apparently unknown. So far as can be learned, the sequence of cases in the town followed closely the sequence of cases among the students, but owing to the laxity of report and record, already referred to, even the approximate dates of the beginning of the disease can not be ascertained.

There seems at first to have been much doubt as to whether the fever was really typhoid fever or the familiar "Ithaca fever." The latter disease, apparently, did not seem so formidable to many citizens.

Throughout the epidemic the situation has been singularly befogged by a tendency on the part of certain of the Ithaca physicians to deny the prevalence of "genuine" typhoid fever, and to ascribe the prevailing illness to "paracolon infection." The evidence on which this view is based appears to be that a negative result with the Widal reaction has been obtained in a considerable proportion of the cases that have been tested. There is no instance where any paracolon or paratyphoid organism has been isolated from any case of the disease. Even if it were conclusively proven that half, or even all, of the cases of "fever" in Ithaca were true "paracolon" infections, it is difficult to see why that fact should materially influence the general situation. It must still have been admitted that a disease of serious character which can not as yet be clinically differentiated from typhoid fever, and which, so far as is known, does not demand essentially different treatment, prevailed excessively in the town. Whatever the nature of the micro-organism, the probable mode of infection and the sources of the infection remained the same, as did the necessity for taking vigorous measures for preventing its spread. There was not a single particular in which the practical handling of the outbreak could have been affected, even if convincing evidence had been secured that all the cases in Ithaca were paracolon cases. The insistence on a distinction, which, under the circumstances, could possess only an academic value and did not facilitate immediate and aggressive action was not a fortunate policy.

(To be continued.)

5. The several dates refer to the day of admission to the infirmary and can be taken as only an approximate indication of the day of inception of the disease.

Gail Borden, inventor of the system of condensing milk, died at San Francisco, Cal., November 26, from poisoning, "after eating a duck that had been kept in cold storage."

Suicides in American Cities.—If we may rely on the statistics quoted by the *New Orleans Times-Democrat*, there are some strange facts as to the relative rate of suicides in the different American cities. San Francisco has the largest ratio, 39.1 per 100,000 of population. Next comes Los Angeles, 29.8. Chicago is the third in order with a ratio of 24.0, followed by the neighboring city of Milwaukee, whose ratio is 22.2, and then New Orleans, 21.8, and Cincinnati following close with 21.2. New Haven is next with 20.9, and then comes the Borough of Manhattan with 20.0, though Greater New York, as a whole, is well down the list with a ratio of only 13.6. This is less than Rochester, Indianapolis, Philadelphia, Pittsburgh, Baltimore, Boston, Detroit, Omaha and Louisville, besides all of those specifically enumerated above. As to the foreign cities, Paris leads the list with a ratio of 42, followed by Berlin, 36; Vienna, 28, and London, 23. There were more suicides in Saxony than in any other country, 31.1 per 100,000. In Denmark the ratio was 25.8, in Austria 21.2, in France 15.7, in the German empire 14.3, and Sweden, Norway, Belgium, Great Britain, Italy, the United States and Spain followed in the order given. Can any of our social philosophers explain why the San Francisco and Los Angeles rates are higher than Chicago? The "foreign element" in Chicago, Milwaukee and Cincinnati can not explain why their rates are so much higher than New York City, where there are also large foreign populations. Does New Haven, in fact, have a higher rate than all other New England cities? And why is the rate in Minneapolis almost double what it is in St. Paul? Will the *Times-Democrat* tell us where it got its figures?—*American Medicine*.

National Charters.—Those interested in securing a National charter for the American Medical Association will be interested in Senator Elkins' bill, which has received the approval of the district commissioners; to incorporate the National Hay Association of the District of Columbia:

Be It Enacted by the Senate and House of Representatives of America in Congress Assembled: That [then follows the names of the incorporators] their associates and successors are hereby created in the District of Columbia a body corporate and politic by the name "The National Hay Association," for the purpose of advancement of the commercial interests of those engaged in the handling of hay and straw, inculcating just and equitable principles in trade; acquiring, preserving and disseminating valuable business information; establishing and maintaining grades of hay and straw and securing their adoption in different markets of the country and facilitating business intercourse. Said association is authorized to have an official emblem and hold real and personal estate in the District of Columbia so far only as may be necessary to its lawful ends in amount not exceeding \$5,000, to adopt a constitution and make by-laws, not inconsistent with law. Said association shall have its principal office within the United States as it may determine and may hold its annual meetings at such places as the said corporators may determine.

The following is the National charter of the American Historical Association, known as public No. 10, and reads as follows:

Be It enacted by the Senate and House of Representatives of the United States of America, in Congress Assembled: That [then follows the names of the incorporators] their associates and successors, are hereby created in the District of Columbia a body corporate and politic, by the name of the American Historical Association, for the promotion of historical studies, the collection and preservation of historical manuscripts, and for kindred purposes in the interest of American history and of history in America. Said association is authorized to hold real and personal estate in the District of Columbia so far only as may be necessary to its lawful ends to an amount not exceeding \$5,000, to adopt a constitution, and to make by-laws not inconsistent with law. Said association shall have its principal office in the District of Columbia, and may hold its annual meetings in such places as the said incorporators shall determine. Said association shall report annually to the secretary of the Smithsonian Institution concerning its proceedings and the condition of historical study in America. Said secretary shall communicate to Congress the whole of such reports or such portion thereof as he shall see fit. The regents of the Smithsonian Institution are authorized to permit said association to deposit its collections, manuscripts, books, pamphlets, and other material for history in the Smithsonian Institution or in the National Museum, at their discretion, on such conditions and under such rules as they shall prescribe.

The general impression is that the Elkins bill will not become a law.

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TROPICAL MEDICINE.

The problems of tropical medicine are becoming of more importance each year with both the profession and the public. The world is filling up, population is spreading over the known habitable regions and the call is ever for more territory for civilized man to conquer. Even on this continent the land hunger is no longer appeased except by encroaching on the semi-arid regions of the west or the sub-arctic territories to the north. The improved means of communication have brought all countries nearer together and the tropical regions of the world are thus made our immediate neighbors and common resorts for vacation excursions. Nearly every civilized country, too, has now its tropical dependencies or is seeking for such. Our own country is no exception, the problem comes home to us now and will be of still more importance as the years go by.

The two chief questions are, 1, the habitability of the tropics by the white race, and 2, the introduction of parasitic tropical disorders into the temperate regions by means of the increasing intercourse and facilities of communication. As regards the first of these, it was maintained in 1898 by such experts as Sambon and Manson that the acclimatization of the white races in the warmer regions of the earth was a practicable possibility. There was, they held, no adequate reason why white men might not live comfortable and useful lives in tropical countries; and the special disorders that have been considered as preventing this were themselves almost universally parasitic and preventable. Any special racial immunity to them was really an acquired one, and there was no reason why, with our increasing knowledge of these disorders, they might not be met and overcome by proper sanitary measures, and why the individual might not also acquire a like immunity. Race deterioration, according to Sambon, is a far more serious question in the crowded urban population of our great centers of civilization than in the tropics, and we have abundant instances of the ability of right-living whites to exist and prosper by their labor under a tropical sun.

Sambon could hardly have fully foreseen how completely his anticipations have been realized, in the phenomenal increase of our knowledge of tropical diseases and of the means to prevent them since 1898. Within that five years or less we have learned in a great measure how to meet and conquer malaria, the chief of the captains of death in tropical regions; yellow fever, which

in its more limited scope was even a worse scourge than malaria, has been shown to be preventable; the causes of tropical dysentery and tropical anemia have been elucidated and the acquisition of the successful methods of their prophylaxis and treatment seems only a matter of time. The success of sanitation in Havana, formerly a typical tropical city in its unhealthfulness and now with a mortality rate below that of many northern cities, is an object lesson of what may be done elsewhere, and almost in itself an answer to our first question, "are the tropics habitable by civilized man?"

The second question is one that directly affects us at our homes. With the yearly increasing intercourse with all parts of the globe, it is becoming impossible to absolutely shut out disease from other regions, even with the strictest quarantine. More and more of our people are residing temporarily or traveling in tropical countries and returning, bringing with them the diseases they may have contracted. Moreover, not all the disorders that we call tropical are strictly such. We find that Shiga's bacillus is the cause of much of our prevailing or locally epidemic bowel disorders in our own climate; uncinariasis, with its attendant anemia, is prevalent in our southern states, and malaria even in its pernicious estivo-autumnal type, may occur almost anywhere within our own borders. American physicians will from this time on have more experience with these disorders and greater need of knowledge for their recognition altogether apart from the possibility of their having to deal with them in actual tropical practice. Admitting that the data already obtained will make them comparatively manageable, there is the constant possibility of new problems arising. We can not bring at once all parts of the world under good sanitary conditions, and there will always be reckless individuals neglectful of hygiene, therefore the worst possibilities are always to be considered. Eternal vigilance is the price of public health as well as of our liberties, and we will do well to consider this fact, even as regards the disorders (so-called) of the tropics in our temperate climate.

With all these facts the importance of the study of these disorders is obvious. Whether they should be kept apart from diseases generally met or be reserved as a subject for special study is a question that might have been raised, but one that to a certain extent has been already answered in England where schools of tropical medicine have been in successful existence for some years. In this country little has been done, so far as treating the subject as a specialty is concerned, though we owe some of the best conducted and most fruitful investigations to our own countrymen. In one or two medical schools chairs of tropical medicine have been arranged for and others will probably follow the example. The subject is one that could appropriately occupy the attention of the American Medical Association at the coming meeting, occurring as it does in the subtropical section of the United States. Whether a special section

on tropical medicine should be constituted or whether the subject should be assigned to a subsection of one of those already organized is a matter for discussion and future settlement. For several reasons we believe that it would be unwise to create a new section, but that it should be made a subsection of that on hygiene and sanitary science. Tropical medicine, however, can not well be overlooked in any future program of the Association.

THE IMPROVEMENT OF THE MEDICAL AND SCIENTIFIC WORK IN OUR HOSPITALS FOR THE INSANE.

There seems to be a general desire among those interested directly in the medical work in the hospitals for insane to raise the standard of that work, to do something to prevent the physicians from falling into mechanical routine, which is the bane of institutional life as ordinarily lived. For some time there has been apparent a general effort to introduce into state hospitals for the insane systematic pathologic work. Pathologic laboratories have been equipped and special pathologists appointed to make postmortem examinations and microscopic and other studies of the accumulating material.

This is certainly a gratifying step in advance. The introduction of any form of scientific activity into these institutions can not but produce a stimulating effect on the medical staffs in general. But it is quite evident that the renaissance of the medical and scientific work of the hospitals for insane can not be accomplished by this movement alone. Indeed, mutterings are heard to the effect that purely pathologic work is not yielding all that was hoped from it; and the reason assigned for this disappointment is that the clinical work as generally done is wholly inadequate to furnish any satisfactory foundation for truly valuable pathologic studies. What is the use of making postmortems and cutting sections of nervous tissue so long as there are no systematic, reliable clinical observations with which the results of pathologic inquiry may be correlated? The reasons usually given for the shortcomings of the clinical work in its various aspects are that the medical officers of the hospitals lack proper training in neurologic and psychiatric methods and that their duties are so varied and onerous that time and energy do not suffice for anything more than the veriest routine. In the present organization of the staffs of the hospitals for the insane there is placed at the head of the whole a superintendent who, though a medical man, is held strictly responsible for every detail in the management. His prime object soon becomes to so conduct his institution that there is a reasonable freedom from gross scandal. Even with the very best of intentions he can not personally direct and train his assistants. These are left to their own devices and assigned to fixed, independent services without time or equipment to make real, systematic, unprejudiced studies of the cases placed under their care.

Evidently there is need for a reorganization of the medical staffs. More physicians must be employed, pro-

visions must be made for their special training, and the medical services must be placed under competent heads with regularly subordinated assistants. Much of the work now done by hospital physicians is not of so strictly medical a character but that it can be done just as well by intelligent persons without medical training. Reforms along these lines might help to bring into the institutions something of that scientific spirit which is needed to overcome the benumbing influences of institutionalism and the tendency routine has to arrest intellectual development. We believe that these suggestions find a sympathetic ear in the conscientious hospital physician and in the public-spirited hospital trustee. In order to secure for the physicians special training in neurology and psychiatry, a training that the medical schools can not furnish at the present time, the most that can be expected being a general preparation for it by thorough schooling in the fundamentals of medicine, each state should organize special institutes manned by specially qualified teachers and thoroughly equipped for scientific clinical and laboratory work. In each of the larger, older states there are now two, three, and even more large hospitals for the insane. At present there is a growing tendency to centralize the administrative management of the state institutions, and the next step in the evolution of the state care for insane should be in the direction of centralization of the medical and scientific work in the manner outlined by the establishment of special psychopathic hospitals and institutes for the proper training of the physicians for all the hospitals in the state. The United States Army maintains an Army Medical School at Washington where the medical officers are given special training and to which they are detailed from time to time for instruction by special courses.

It is something on this plan that we have in mind for the men in the service of the state hospitals for insane. There is no reason except ancient custom why the assistants in the state hospitals should remain so fixedly attached to one institution as is the vogue now. It would seem practicable to place the entire personnel of the various medical staffs of the hospitals of a state under a central management that could distribute the physicians among the different institutions according as the good of the service and the special requirements sure to arise from time to time would indicate. The introduction of this principle would give to the hospital services a feature of elasticity that probably would prove beneficial alike to the hospitals and to the individual physicians. Then again, as men with special aptitudes were discovered and developed, their work could be encouraged by leaves of absence from regular duty, but with pay, for the purpose of special study at suitable places at home or abroad. Certainly the state could do much to raise the standard of the medical work in its hospitals for insane by careful organization of the medical services as a whole with a central institute at the head and by reorganization of the services in the single

hospitals along lines that tend to lift up the more purely clinical side as well as the pathologic. Conditions would then be established that would favor directly the growth of scientific work in the hospitals.

THE DEADLY HEADACHE POWDER.

Powders containing acetanilid, sold indiscriminately by the drug stores and used universally, possess dangers other than those due to their depressing effect on the heart, which in several instances has led to sudden collapse and even death. Acetanilid, and other substances of similar nature, have a marked hemolytic effect which is of great importance when this sort of medication is long continued. Stengel and White¹ have published a most instructive case-report, illustrating the very serious results that may follow drug taking of this kind. A young woman who had been suffering for four years from infradental neuralgia, developed severe symptoms that seemed of cardiac origin. She became extremely cyanosed; her lips, fingernails and toenails were dark blue or almost black. The heart's action was rapid and very weak, but in spite of all the cyanosis there was no dyspnea or edema, suggesting that cardiac incompetence was not the fundamental difficulty. Examination of the blood showed at one time but 2,092,300 erythrocytes, and 35 per cent. hemoglobin. There were 71,400 nucleated cells, of which no less than 32,323 were nucleated red corpuscles. Of course, all sorts of abnormal forms of erythrocytes accompanied this picture. Hemoglobin and hematin were present in the urine. For some time it was impossible to prove the origin of this severe anemia in drug taking, for not only did the patient deny the use of remedies, but her brother, who was a physician, was certain that the cyanosis was not due to a drug. At last, however, a box of capsules containing the familiar "headache and neuralgia" compound, acetanilid, caffeine and bicarbonate of soda, was received by the patient, and eventually she confessed that for four or five years she had taken such compounds.

The secret way in which the headache powders had been taken, deluding even the patient's physician-brother, is very interesting, indicating that the victim of such a habit is not far removed from the morphin fiend. It suggests the possibility of similar cases existing in larger numbers than we appreciate, for in this case it is certain that the origin would not have been detected but for the careful blood examination and the deductions from its results. The changes in the blood were so characteristic of the action of a hemolytic agent, and so resembled those seen in the few accurately reported cases of poisoning by anilin derivatives, that the denials of both the patient and her brother were unable to draw the observers from the right track.

The effects of acetanilid, phenacetin, nitrobenzol and other poisons of the same nature are well known. Among the symptoms described are cyanosis, profound depression or collapse and unconsciousness; but, as a

rule, dyspnea and subjective symptoms have been slight or wanting. There have been few chronic cases, similar to that of Stengel and White, reported as yet, but we suspect that they are not uncommon. In those so far studied the characteristic changes have been in the blood, including the presence of all sorts of altered red corpuscles, with great numbers of nucleated erythrocytes. In one case the proportion of the nucleated forms was as high as one to fifty-six of the non-nucleated.

THE BUSY PRACTITIONER AND HIS OPPORTUNITIES.

We called attention some months ago¹ to the emptiness of the excuse given by a class of busy practitioners for their failure to interest themselves in what concerns the general good of the medical profession, such as society work, medical legislation and the like. They are, forsooth, too busy with their practice. For such men, as well as for the busy physician who faithfully tries to fulfill his duties to the profession and feels all the responsibilities of his professional work, a reference to some things that have been accomplished for clinical medicine by physicians in active practice may prove an inspiration. The "busy" man is apt to think that he should be exempt from the obligation of trying to extend the bounds of medical knowledge. His occupation, he may claim, is a practical application of the discoveries of others. Active practice absorbs so much energy and time as to leave none for anything beyond his patients and their immediate needs, and certainly no opportunity for original work. It used to be the excuse of the medical college professor that he had to devote so much time to teaching and practice that he could not be expected to do any investigating. Now it is recognized that only he can teach well who is himself doing original work.

Only the physician who so carefully examines his cases that he sometimes makes observations not to be found in the text-books, is doing his patients justice and keeping himself up to date. It is the men who thus impress their personality on medicine that receive the highest rewards of the profession, the confidence of their fellow practitioners—and frequent calls in consultation. Most of the great advances in medicine have come, not from ambitious theorists, but from the carefully recorded observations of the general practitioner.

The great principle of the conservation of energy was discovered by Robert Meyer while ship surgeon on a vessel in the Dutch East Indies. He observed during the practice of venesection that the venous blood drawn in the tropics was much redder than that he had seen in colder climates. He argued that this was due to the fact that less oxidation took place in the blood in tropical countries, because less work was demanded of it in keeping up the heat of the body. The surrounding air accomplished the purpose of heat production and so saved oxydizing processes in the blood. From this simple observation to the magnificent generalization of the con-

1. THE JOURNAL A. M. A., July 12, 1902, p. 84.

servation of energy seems a far cry, yet the basic principle of modern physics lies in the simple problem whose solution the young German physician grasped so clearly.

Morgagni, whom Virchow greeted as the Father of Modern Pathology, was first of all a clinical observer, a careful student of the cases that came under his observation. His pathologic studies were always directed to the better understanding of his clinical cases, and that is what makes his great work of such practical value. Auenbrugger, the discoverer of percussion in the investigation of thoracic disease, was a simple practitioner of medicine all his life. While Auenbrugger was doing his great work in Austria Jenner was preparing for his in England. Jenner was just a country practitioner, but, in spite of all the *laissez aller* that term is supposed to imply, he was one of the keenest of observers. When he told the famous John Hunter of the popular belief in Gloucestershire that cowpox protected against smallpox, and that the subject seemed worth thinking about, Hunter blurted out, "Don't think, investigate." Laennec, his illustrious contemporary, the discoverer of auscultation, the greatest physician of the nineteenth century and one of the four or five greatest geniuses in the history of medicine, was just a medical practitioner with a hospital service. He took for the motto of his immortal work on auscultation the Greek maxim, "The most important part of an art is to know how to see things." Bright and Graves and Addison were busy physicians in the best sense of the term, yet were faithful observers who paid proper interest on the medical knowledge lent them, by handing it on notably increased in value to their successors. And there is yet, and ever will be, a place in the footsteps of such men for the earnest busy practitioners of this and every generation.

A TRAVELING POST-GRADUATE SCHOOL.

The German newspapers have recently announced the preliminary preparations for a migrating post-graduate school under the special auspices of the German government, which shall go from town to town away from the medical centers, carrying with it a museum and sufficient material to be of advantage for instruction and to include among its lecturers some of the leading lights in medicine and surgery in Germany. The idea of this seems to be the better education of the local physicians, who for various obvious reasons can not take a post-graduate course at the university. The mountain will go to Mahomet in this case. The project has the support of the emperor and is to perpetuate the name of the Empress Frederick and to be largely supported by government aid. As we understand it, the instruction is to be gratuitous for such physicians as attend. There is much that seems admirable in this plan, and it is to be hoped that it will develop into all that its well-wishers can desire. The German physicians will have the university brought to their very doors. It is, in fact, a special adaptation of the university extension idea applied to medicine and medical instruction; a proposition that can

be carried out in this country by the profession itself when a little better organized.

AN EXTENSIVE BUSINESS IN PROPRIETARY MEDICINES.

The extent of the proprietary medicine trade is well illustrated by a recent statement in the *New York Commercial*, in its Indianapolis dispatches, that the latter city can, when running its manufacturing at full capacity, supply annually over 21,000,000 ordinary barrels of remedies—of all kinds, we presume. It claimed in the dispatch that Indianapolis is the great medicine manufacturing city of the country and supplies not only the adjoining states, but more remote regions and even foreign countries. How much the popularity of patent medicines is due to the alcoholic contents of many of the nostrums it would be hard to say, but undoubtedly they go a long way in satisfying the appetite that for conventional, social or legal reasons can not be fully gratified otherwise. If the statements are true as regards this one city, what can we calculate as the drug output of the country as a whole? Making all due allowances for exaggeration the reality must be a sufficiently formidable one to give rise to some serious consideration.

THE MICHIGAN STUDENTS' PROTEST.

The proposed medical practice act for Michigan, which is intended to put the law there on the same plane as it is in other progressive states, is receiving opposition from the students of certain medical colleges of that state. These students object to passing an examination after obtaining a diploma, holding that the state, by the incorporation of these institutions, entered into an agreement with them by which they should have in their diploma the necessary qualifications for a license to practice without having to undergo an examination. Being graduates of Michigan colleges they think they ought to be favored above those who obtain their diplomas elsewhere. As far as we have been able to learn, they do not claim that their colleges are better than those in other states, or that they themselves are better educated. It certainly can not be possible that they are willing to let it be thought that they have a lack of confidence in themselves and in their medical scholarship or that they wish to cast any reflection on their alma mater by this plea for exemption from the state examination. And yet this is what one would naturally surmise. These students, it is said, are sending delegations to Lansing to lobby against the act. What influence they may have is more than can be foretold, but it is to be hoped that they may soon see the folly of this exhibition of selfishness, not to use a stronger term. These students seem to ignore the fact that this same fight has been made under similar conditions, and with like arguments, in other states, and without success. A funny condition would soon prevail if graduates of a medical college in a given state were to be exempt from the laws that applied to graduates from outside colleges. We hope the students of the Michigan medical colleges will see the unwisdom of their action and assist, rather than oppose, those who are fighting for the elevation of the standard of the profession which they are about to enter.

Medical News.

CALIFORNIA.

Jury Disagrees.—The jury to which was committed the case of Mrs. Julia Tickel, known as Mrs. "Dr." Jones of Fresno, charged with causing abortion, was unable to agree and was discharged.

Physician Wins.—In the case of Dr. Jacob H. Parseghian, Fresno, against H. Azhderian, for medical attendance furnished the son of the latter, the decision was in favor of the plaintiff for \$400.

Indicted Optician Escapes.—A warrant was recently issued in Bakersfield for the arrest of C. Belmont, an optician, who, it was alleged, had practiced medicine without first registering his diploma. On attempting to serve the warrant, the constable discovered that the accused had gone to Los Angeles.

San Francisco Deaths.—During February 633 deaths were reported, which, after the deduction of 57 due to violence, leaves 576, equivalent to an annual death rate of 16.84 per 1,000. In February, 1902, the rate was 18.79 per 1,000. The principal causes of death were: Tuberculosis, 95; heart disease, 94; pneumonia, 61; Bright's disease, 42; cancer, 28; accident, 36; diphtheria, 14; suicide, 15; homicide, 6.

To Restrict Practice of State Employees.—The resolutions recently adopted by the San Joaquin Medical Society, directed against private practice by the physicians at the state hospitals, have been crystallized into a bill which has the following provisions:

The medical superintendents and assistant physicians of the several state hospitals for insane persons must not engage in the private practice of medicine, but must devote their whole time to the performance of their duties, unless granted leave of absence by the board of directors. If any of such physicians shall engage in the private practice of medicine his office shall thereon become vacant, and the board of directors, or other appointing power, shall immediately appoint some qualified person, other than the officer whose office shall have become so vacant, to fill such vacancy.

COLORADO.

New County Hospital Staff.—The new staff of the Arapahoe County Hospital is made up as follows: Medicine, 9; surgery, 8; obstetrics, 3; gynecology, 3; eye and ear, 4; nose and throat, 1; nervous and mental disease, 3; orthopedics, 1; dermatology, 2, and pathology, 2.

Denver Health and Deaths.—The deaths during January numbered 235, equivalent to an annual death rate of 17.09 per 1,000. Tuberculosis caused 58 deaths; pneumonia, 30; inanition, 10, and violence, 9. Infectious and contagious diseases were reported as follows: Scarlet fever, 85; diphtheria, 69, and smallpox, 34.

State Vital Statistics.—The total deaths for January were 856, equivalent to an annual death-rate of 17.47 per 1,000. Typhoid fever caused 23 deaths, diphtheria 12 and scarlet fever 7. During the month, 279 cases of smallpox were reported, 78 of which were from Yuma County, 48 from Rio Blanco County, 47 from Otero County and 60 from Arapahoe County; 206 of scarlet fever, and 133 each of diphtheria and typhoid fever. Compared with December, 1902, January shows a decrease of 43 cases of diphtheria, an increase of 49 cases of scarlet fever and 153 cases of smallpox, and a decrease of 107 cases of typhoid fever.

DISTRICT OF COLUMBIA.

Health of the District.—The report of the health officer for the week ended February 28 shows the total number of deaths to have been 161, of which 91 were white and 70 colored; births, 116; number of cases of typhoid fever, 91; scarlet fever, 10; diphtheria, 6, and smallpox, 10.

Appropriation for Hospitals.—Congress has made an appropriation of \$100,000 for the Providence Hospital, and \$1,000 for the Garfield Memorial Hospital; \$15,000 for the Washington Asylum Hospital, and \$99,000 for the Government Hospital for the Insane, with \$11,500 for a subway connecting the various buildings.

ILLINOIS.

Chicago.

Augustana Addition.—The long-planned addition to Augustana Hospital is to be erected this spring at a cost of \$100,000. It will be fireproof, six stories high, and 110 by 130 feet.

Two Hospitals Fined.—Fines of \$50 each were imposed on the Chicago Hospital and the Norwegian (Tabitha) Hospital, for violations of the city ordinance regarding elevators and elevator shafts.

Smallpox.—During the week seven new cases were reported. Only one patient, an adult, had been vaccinated, and he in infancy. No case of smallpox in a revaccinated person has been found in Chicago for years, says the department of health.

Deaths of the Week.—During the week ended March 14 631 deaths were reported, an increase of 6 per cent. over the mortality rate of the preceding week, and of nearly 10 per cent. over that of the corresponding week of 1902. Pneumonia led with 133 deaths, and consumption followed, with 60. Violence caused 20 deaths and suicide 17.

Vacuum Cleaning.—The department of health advocates the vacuum method of cleaning sick-rooms, saying that "consumption, pneumonia, influenza, scarlet fever and similar diseases are known to be spread by infected dust of the sick room, so the distinct and recognized purpose of the operation shall be to remove and not simply to stir up the ever-gathering dust.

Scarlet Fever Closes Lake Forest University.—Because of the continuation of the epidemic of scarlet fever at Lake Forest, the university will be closed for two weeks. The quarantine on the university grounds has prevented an extension of the disease among the students, but it is spreading in the town. No public meetings will be held. Most of the new cases have been in families where the disease already existed. No new case has occurred among the university students for about eight weeks.

IOWA.

Verdict for Defendants.—In the suit for \$5,000 damages brought against Drs. Thomas J. and John R. Maxwell, Keokuk, by Mrs. Theresa Winkler, who alleged that the defendants removed a portion of her husband's brain during an autopsy and did not return it, the plaintiff was non-suited.

Resignations.—Dr. Lewis Schooler, Des Moines, for 19 years dean of Drake University medical department, has resigned, and Dr. A. Raymond Amos, now secretary, has been elected to succeed him. Dr. Schooler will retain the chair of surgery in the college.—Dr. Francis M. Powell, superintendent of the Iowa Institution for Feeble-Minded Children, at Glenwood for more than 20 years, has resigned on account of failing health.

Commendable Fraternity.—All but four of the physicians of Hardin County have joined in a petition with the object of aiding Dr. William E. Marsh of Eldora, who has become nearly blind. The petition asks the appointment of Dr. Marsh as the county physician employed each year to treat the poor of the county. In asking this appointment, the physicians agree to give their services whenever called on by the county, that is, to do Dr. Marsh's work for him. The salary is \$800 a year. Four physicians declined to join in the petition and filed individual bids seeking the appointment as county physician for themselves.

Itinerants Must Leave State.—The State Board of Medical Examiners is announced to be about to undertake a crusade against the itinerant practitioners who infest the state.—R. D. Rea, recently fined at Emmetsburg for practicing medicine without an itinerant doctor's license, has combined with about 75 other specialists of his kind, retained an attorney and proposes to carry the case to the Supreme Court of Iowa, or if necessary to the United States Supreme Court.—G. H. Heath, a magnetic specialist who travels with his wife, a clairvoyant and another woman, a complexion specialist, was arrested at Boone, on the charge of being an itinerant practitioner without a license, and was bound over to await the action of the grand jury.

KANSAS.

Personal.—Dr. George C. Purdue and family, Wichita, are taking a trip to the south and Cuba.

Hospital Fire.—A fire at the Pittsburg City Hospital, February 21, damaged the building to the extent of about \$1,000, but caused no casualties.

Patent Medicine Bill Dead.—This bill, which turns up at every session of the legislature, has been referred by the senate committee on hygiene and public health to its introducer, Senator Gabriel, for revision, and the senator declares that he will not reintroduce it.

To Prevent Marriage of Defectives.—The O'Donnell marriage bill passed the house, February 23, by little more than a majority. The bill in full is as follows:

Section 1. No woman under the age of 45 years or man of any age, except he marry a woman over the age of 45 years, either of whom is epileptic, imbecile, feeble-minded, or afflicted with insanity.

shall hereafter intermarry or marry any other person within this state. It is also hereby made unlawful for any person to marry any such feeble-minded, imbecile or epileptic person or any one afflicted with insanity, or any person who has ever been so afflicted. Children born after a parent was insane shall not marry except under the above named conditions.

Section 2. No officer authorized by law to issue marriage licenses in this state shall hereafter issue such a license to any persons either of whom is afflicted with any of the diseases mentioned in Section 1 of this act, knowing them to be so afflicted, unless the female party to such marriage is over the age of 45 years.

Section 3. No clergyman or officer authorized by law to solemnize marriages within this state shall hereafter perform a marriage ceremony, uniting persons in matrimony, either of whom is afflicted with epilepsy, imbecility, feeble-mindedness, or insanity, knowing them to be so afflicted, unless the female party to such marriage is over the age of 45 years.

Section 4. Any person violating any of the provisions of this act shall on conviction thereof be punished by a fine of not more than one thousand dollars or by imprisonment in the state's prison for not more than three years, or by both such fine and imprisonment.

MARYLAND.

Smallpox.—There have been 5 cases of smallpox at Aberdeen, Harford County, and the public school and churches have been closed. The first case was imported from Delaware, and was so mild as to be unrecognized. A case has also appeared at Havre-de-Grace in the same county.

Hospital Reports.—According to the annual report of the Cambridge Hospital 529 patients, 397 white and 132 colored, were treated during the year. Fourteen deaths occurred and 265 surgical operations were performed.—There are 484 patients in Maryland Hospital for the Insane, No. 2. The new cottage for epileptics will be commenced early in April.

Baltimore.

Personal.—Dr. Joseph E. Clagett was stricken with apoplexy on March 9.—Dr. Annie G. Lyle, a graduate of Johns Hopkins, 1902, has been appointed assistant to Dr. Esrech at the University of Vienna.—Dr. Martin B. Tinker, assistant resident physician at the Johns Hopkins Hospital, has resigned.

Anti-Tuberculosis Crusade.—A large meeting of physicians and others interested in the anti-tuberculosis crusade, was held, March 10, under the auspices of the State Tuberculosis Commission. The city is to be divided into 8 or 10 districts, and agents will visit houses in which there are cases of consumption. Dr. Fulton emphasized the influence of infected houses. Dr. H. W. Buckler spoke of the need of a state institution and said the dispensaries should not treat cases of consumption as it is spread thereby.

Mortality and Smallpox.—The mortality was unusually large last week, being 231, equivalent to an annual death rate of 21.95 per 1,000. Among the deaths were 41 from pneumonia, 11 from bronchitis, 7 from measles and 9 from la grippe. Five new cases of smallpox were reported. The earlier cases were treated as chickenpox by a colored practitioner and there was free intercourse between the patients and a large number of persons who frequented the house. There is considerable likelihood of an epidemic, and the health department is taking extreme precautions.

MASSACHUSETTS.

Tribute to Dr. Gage.—On the resignation of Dr. Thomas H. Gage from the board of trustees of the Worcester Insane Hospital, after a continuous service of 27 years, the board passed resolutions testifying to the faithful, intelligent and valuable service rendered by Dr. Gage to the institution.

Illness at Harvard.—Dr. Marshall H. Bailey, Cambridge, medical visitor to Harvard, reports 5,388 cases of illness during 1902. Nearly a third of the patients merely reported themselves ill and did not wait for any examination or treatment. There were very few serious diseases, throat disorders leading with 307 cases of laryngitis and 185 of tonsillitis.

State Manufacture of Antitoxin and Vaccine.—Two bills are before the public health committee regulating the manufacture of antitoxin and vaccine by the state. The former has been furnished to physicians free by the State Board of Health and has been highly efficient. A movement to have the product put in charge of the State Board of Agriculture is opposed by physicians and druggists alike. It seems probable that a bill will be reported which will put both of them under the control of the State Board of Health.

One Lesson Not Enough.—Dr. Immanuel Pfeiffer, Boston, who so narrowly escaped death from smallpox last year as a result of his obstinate opposition to vaccination, has appeared before the Massachusetts Legislation Committee on Judiciary with a petition that no person shall inject into the body of another person any poison or poisonous substance without the

consent of the person operated on. His appeal to lawyers instead of physicians on a matter which concerns public health, shows how few are the medical men who support Dr. Pfeiffer's views in Boston.

MICHIGAN.

Personal.—Dr. Charles G. Jennings, Detroit, has been appointed a member of the State Board of Health.—Dr. Howard A. Gruba, major and surgeon, U. S. V., who has served for five years in the Philippines, has returned to Coldwater.

In Trouble.—A. W. Van Bysterveld, Grand Rapids, fined \$100 and costs at Grand Rapids for practicing medicine without a certificate, has, it is said, evaded the law by associating with him Dr. George R. Adkin, who, being a legal practitioner, writes prescriptions, the "miracle-worker" keeping officially in the background.—Henry Salisbury, Belding, charged with practicing medicine without a license, pleaded guilty, and was fined \$10 and costs.

"Mail Cure" Healers Convicted.—Drs. James M. Peebles, Walter T. Bobo and Charles M. Green, of the "People's Institute of Health," Battle Creek, have been convicted by a jury in the United States District Court, Detroit, of violating the postal laws, by advertising mental cure by mail for all manner of ills. One of the defendants admitted that if a patient at a distance managed to procure Dr. Peebles' signed instructions and followed them faithfully the cure would not be effective if the patients had not paid the fee of \$1. A thirty-day stay of proceedings was granted.

Prevalence of Disease.—For February, 1903, compared with the average for February in the 10 years, 1893-1902, scarlet fever, measles, smallpox and whooping cough were more than usually prevalent; and consumption, intermittent fever and remittent fever were less than usually prevalent. For the first time this season, influenza headed the list of those diseases which usually cause the most sickness in Michigan, but was 14 per cent. less prevalent than the average for February in the preceding ten years. Bronchitis, rheumatism, neuralgia and pneumonia were also less prevalent than usual.

The Most Dangerous Communicable Diseases.—Meningitis was reported in Michigan during February, at 9 places; whooping cough at 46 places; diphtheria at 77 places; typhoid fever at 89 places; measles at 103 places; scarlet fever at 179 places; consumption at 193 places, and smallpox at 201 places. Meningitis was reported at 2 places more; whooping cough at 9 places more; diphtheria at 3 places less; typhoid fever at 6 places less; measles at 2 places more; scarlet fever at 6 places less; consumption at 76 places less, and smallpox at 15 places less, in February, 1903, than in the preceding month.

Smallpox Suits.—Seron Bartow has entered suit against Dr. Robert B. Bennett Brant, for \$5,000, alleging that he "falsely and wickedly gave it out on two occasions that members of the plaintiff's family had smallpox, thereby causing the family to be quarantined for 71 days, preventing him from attending to his duties as a farmer and depriving him of the companionship of his friends and neighbors. The value of this he estimates at a little more than seventy dollars a day.—Dr. Curtis T. Wolford, Grand Rapids, has been charged by Dr. Thomas M. Koon, health officer, with having failed to report to the health office a case of smallpox.

The Nottingham Bill.—The bill—which we have editorially mentioned—in amendment of medical registration, introduced by Dr. D. M. Nottingham, Lansing, is designed by its author to raise the standard of examination and require all graduates to pass an examination before the medical board, irrespective of what college they come from. It will also favor reciprocity with other states. It is also designed to make the standard of entrance to medical colleges higher, as it requires that the candidate for entrance to such college shall have at least a high school diploma or its equivalent, according to the idea of the board of registration. A vigorous protest has been entered against the bill by the students of the three medical colleges of Detroit, who sent a delegation to Lansing, February 16, to present their protest before the Committee on Public Health of the legislature.

February Mortality.—The total number of deaths reported for February was 2,756, or 100 fewer than the number of deaths in the preceding month. The death rate was 14.4 per 1,000 population, as compared with 13.5 in January. The mortality was slightly higher than that for February of the preceding year. There were 559 deaths of infants under 1 year, 175 deaths of children aged 1 to 4 years, and 874 deaths of persons aged 65 years and over. Important causes of death were as follows: Tuberculosis, 217; pneumonia, 372; typhoid

fever, 34; diphtheria and croup, 52; scarlet fever, 16; measles, 17; whooping cough, 31; influenza, 73; cancer, 126; accidents and violence, 134; smallpox, 5. There was a decrease in the number of deaths from typhoid fever and scarlet fever, while the number reported from influenza was nearly double the number in January. The death rate from this cause, however, was not as high as during the same time last year.

NEW YORK.

Dr. Scollard's Estate.—The will of the late Dr. James I. Scollard, Clinton, was admitted to probate, March 7. The estate, valued at \$210,000, is left to the family.

Personal.—Drs. Henry A. Gates, Delhi; Grant C. Madill, Ogdensburg, and Frank W. Sears, Binghamton, have been appointed consulting surgeons to the New York State Hospital for the Care of Crippled and Deformed Children, Tarrytown.

Polluted City Ice.—So much polluted ice is brought to New York City from the Hudson River that a bill has been introduced in the legislature prohibiting the cutting of ice for domestic use between Waterford and Coxsackie on that river, or within 3,000 feet below any town of more than 10,000 inhabitants on said river.

To Protect Buffalo.—State Commissioner of Health Daniel Lewis has appointed Drs. Walter D. Green and Edward Clark health commissioner and assistant health commissioner of Buffalo respectively. This action was taken in order that proper authority might be given to the Buffalo health authorities to protect Buffalo from the source of typhoid fever infection in West Seneca just outside the city limits of Buffalo and outside the jurisdiction of the Buffalo health authorities unless especially vested with power.

New York City.

Enforce Sanitary Crusade.—On March 11, about fifty policemen of Brooklyn were kept busy arresting those who violated the law against expectorating in public places. Up to noon, 14 offenders were arrested, admonished, and paroled until April 2.

Physicians in Insurance Frauds.—In connection with the unearthing of extensive frauds against life insurance companies two physicians, practicing in this city have been indicted: Albrecht Loewit, of 1,833 Lexington avenue, who is out on \$5,000 bail, and Francesco Nucci, of 2,072 First avenue, who has furnished \$2,500 bail.

Glanders in the City.—According to United States officials there are many cases of glanders in this city, though the records of the health department do not support this contention. Strict quarantine is placed on all infected stables, and every horse in the stable is tested with mallein and his temperature observed for two days before the quarantine is raised. Special attention is given to stables where the horses of milk dealers are kept.

Society Protects Members.—The first case in which the New York State Medical Association assumed the defense of a member sued for malpractice was tried in the Sixth District Municipal Court, March 10. The plaintiff, husband of a patient of Dr. Joseph E. Janvrin, sued the latter for malpractice, alleging the discovery of some error in treatment. This suit followed hard after one in which the physician was the plaintiff and the cause was the non-payment of his bill. Dr. Janvrin won this suit, and the suit for alleged malpractice was also decided in his favor.

Betterment of the Consumptive.—A new sun parlor, costing \$10,000, is to be erected on Blackwell's Island for the use of the consumptives there. It will be a one-story structure enclosed in glass on all four sides, and furnished with reclining chairs and sofas. The Tuberculosis Committee of the Charity Organization Society has planned a country sanatorium on a large scale, which shall have permanent buildings, farms and a tent encampment, and shall accommodate 500 patients. Out-door occupation is to be provided for the men on the farm, and for women in horticultural pursuits. It is estimated that the cost will be \$530,000, which is thought to be reasonable enough in view of the fact that it has been computed that the total annual loss to the city from tuberculous diseases is at least 23 million. The health department says that an appropriation of only \$40,000 will be asked for to begin with, and that it is hoped that the sanatorium may be ready by the middle of June. The society favors some location in Westchester county, while the health authorities are disposed to select a site in Orange County a short distance west of Tuxedo. For a year past the House of Rest for Consumptives has been engaged in remodeling a mansion in that part of the city known as Inwood, for a tuberculosis hospital. This has

developed a strong opposition among the wealthy residents in that vicinity, and a physician is aiding this opposition by calling attention to the danger of spreading tuberculosis among the residents near the proposed hospital.

Buffalo.

Personal.—Dr. Burt C. Johnson and Dr. Harry Meade sail for Europe to-day.

Unsanitary Barbers.—Several Italian barbers have been convicted for violation of the ordinances in conducting unsanitary barber shops.

Fatal House-to-House Distribution of Samples.—A three-year-old girl died from the effects of eating sugar-coated pills that were distributed from house to house. The health commissioner is making a thorough investigation of the case.

OHIO.

Scholarship for Physicians' Daughters.—Dr. Elizabeth L. McMahon, Marion, in her will, which has recently been filed for probate, left \$8,000 to found a scholarship in Vassar College for daughters of deceased physicians.

Much Typhoid.—Cleveland had more cases of typhoid reported in the week ended February 28 than in any similar period in her history. In the corresponding week of 1902 there were 8 cases; in 1903, 109 cases. The mortality from typhoid for the week was 6.

Abortionist Sentenced.—Dr. H. Negley Teeters, Steubenville, charged with having caused the death of Miss Grace Goodlin of Empire, by a criminal operation, pleaded guilty and was sentenced on March 3 to imprisonment for four years in the penitentiary.

The State Board's Report.—The annual report of the State Board of Medical Registration and Examination shows that certificates were issued during the year as follows: To Ohio matriculates, 323; to graduates on examination, 62; to midwives, 3; to osteopaths, without examination, 120; to osteopaths, with examination, 1. Nineteen applications were rejected, and 13 applications of osteopaths. Two certificates, those of Dr. A. E. Hoskinson and Dr. C. F. Crookes, both of Columbus, were revoked during the year. There were 18 prosecutions under the medical law.

Personal.—Dr. Raymond E. Whelan, who has been serving as captain and assistant surgeon of volunteers in the Philippines, has retired from the Army and will resume practice in Youngstown.—Dr. William A. Burns, Dayton, has been appointed captain and assistant surgeon, O. N. G., and assigned to the Ninth Battalion.—Dr. James Wilson McMurray, Marion, has been appointed inspecting physician for the State Board of Health.—Dr. Henry M. Taylor, Columbus, has returned from California, but will not resume practice on account of continued ill-health.—Dr. Robert E. Swigart, Tiffin, has accepted the position of physician for a large fruit company at Bocas Del Toro, Columbia.

PENNSYLVANIA.

Abortionists Convicted.—Drs. Edwin S. Cooper and J. P. Haun, New Castle, were recently convicted of conspiracy in connection with criminal treatment which led to the death of Mabel Williams of Johnstown.

To Make Barbers Clean.—A bill for the sanitary regulation of barbering and providing for the better instruction of those engaged in the trade has been passed by the legislature. The law applies to first, second and third class cities only.

Child Labor.—A bill has been introduced into the legislature making it unlawful to employ any child under 14 at any labor during public school hours, and working hours for children are limited to 10 hours a day and 55 hours a week.

To Regulate Sale of Poisons and Spirits.—A bill has been introduced into the legislature which provides that it shall be unlawful to sell any medicines, drugs, chemicals, mixtures, anodynes, or any preparation or combination of the same which shall contain any opium or its alkaloids, coca or its alkaloids, or any whisky, brandy, wine or other intoxicating liquors, unless the same is so sold or furnished on the written prescription or order of a physician.

Appropriations for Hospitals.—Bills appropriating the following amounts for various hospitals have passed the house of the legislature: Jefferson Hospital, \$260,000; University of Pennsylvania Hospital, \$120,000; Medico-Chirurgical Hospital, \$290,000, all of Philadelphia; Chester County Hospital, \$14,000; Good Samaritan Hospital, Lebanon; Allentown

Hospital, Pittston Hospital, each \$15,000, and Homeopathic State Hospital for the Insane, \$1,000,000.

Hospital for Poor Consumptives.—The treasurer's report of the Free Hospital for Poor Consumptives shows that the receipts for the year ended February 28 were \$70,757.74. The sum of \$3,897.99 was collected in glass globes placed in stores and public offices. Within the year 561 patients were cared for, 481 at White Haven Sanitarium, and 80 in other institutions, by payment of their board. Of the patients at White Haven, 33 remained from the preceding year, 258 new cases were admitted, 86 left, 108 were discharged, and 5 died. There are now 100 patients at White Haven. Among the newly elected officers are Dr. Lawrence F. Flick, president, and Dr. Henry M. Fisher, one of the managers.

Philadelphia.

Expectoration Ordinance.—A city ordinance has been passed making it a misdemeanor to spit on the sidewalk, on floors of cars and other public places, the offense punishable by a fine of \$1 and costs. Director English has instructed policemen to enforce the ordinance.

Good Water Filtration Secured.—The chief of the bureau of water filtration is much pleased with the city's new filtration system, claiming that the standard for the number of bacteria and for turbidity have both been lowered, and that the work here is better than the best results obtained in other cities. Provision has so far been made for filtration of only a part of the city's supply.

Held as Accessory to Murder.—George Horsey, a negro, a so-called "herb doctor," is held without bail on the charge of being accessory to the crime of murder. He is believed to have sold poison to Mrs. Catherine Danze for the murder of her husband. In the preliminary hearing it appeared probable that Horsey was not only accessory to this crime, but that he has for years furnished "slow poison" in many similar cases of murder. The case is being vigorously and thoroughly investigated.

Contagious Disease Report.—The health record shows that 458 new cases of grave contagious diseases were reported to the authorities for the week ended March 14. Of typhoid fever there were 272 cases, of smallpox 44, of scarlatina 101, and of diphtheria 41. The total number of deaths were 577, as compared with 528 for the same week last year. The records show that about 4,300 cases of such contagious diseases are now under treatment in Philadelphia. The number of new cases of smallpox since January 1 is over 300.

Physicians Endorse Medical Bill.—A mass meeting of many prominent physicians was held on the evening of March 7 in support of the Ray bill introduced into the legislature. The purpose of the bill is to raise the standard of education preliminary to a medical course. The following was adopted as the sense of the meeting:

Resolved, By this mass meeting of the physicians of Philadelphia, believing that the welfare of our citizens will be thereby advanced, that we hereby endorse the original bill of Mr. Ray, and ask for its enactment into a law by our authorities.

GENERAL.

The Ecuador Quarantine against San Francisco has been removed, beginning with vessels leaving that port March 12.

Reception to Dr. Osler.—The Medical Club of Philadelphia will give a reception to Dr. William Osler of Baltimore at the Hotel Bellevue, March 27.

Suspected Cholera Ship at New York.—The Anchor line steamer *Karamania* arrived March 10 at New York from Marseilles, Palermo and Naples. Seven of the steerage passengers and crew had died of an unknown disease. Sixteen had been sick. The symptoms were uniform, and resembled those of Asiatic cholera. No decision could be reached, the bodies having been buried at sea and there not being sufficient data to warrant a definite statement. The ship was fumigated and unloaded and the passengers detained in quarantine for ten days. No other case has developed. It is suggested that the deaths were from ptomain poisoning or from noxious gases from the hold. The matter has excited much discussion.

Mexico and Texas Plague Quarantine.—A quarantine has been declared by Mexico against San Francisco, applying to all Mexican ports, on the ground that the plague at Mazatlan came from San Francisco, and that it had also existed in the latter city as late as January. It will be remembered that this latter allegation is contrary to the advices from competent officials concerning San Francisco. Cuba has placed a quarantine against certain Mexican ports, because of fear of the

plague. The State of Texas has quarantined Torreon, Mexico, alleging the existence of plague there. This action has aroused a vigorous protest from Torreon and from the Mexican capital. It is stated that no plague exists in Torreon, but that several Chinamen came there from San Francisco and, as ten days had not elapsed since they left the latter city, they were isolated for observation, and all measures taken in accordance with the sanitary code. El Paso, Texas, has instigated a quarantine against Durango, Mexico. The United States government ordered an investigation of the rumors concerning Torreon and Durango and Texas, by one of its state health officers, ordered a precautionary ten days' quarantine until the cases could be investigated. The physicians at Torreon have declared that no plague exists there and have requested that the quarantine be raised. The authorities of Texas state that this will be done as soon as they are sure that there is no reason for its continuance. The report that plague exists at Villa Union, Mexico, is confirmed. This point is on the route to the interior and has been vigorously quarantined. The infection was doubtless brought from Mazatlan by some of those escaping from that city and, therefore, eluded the quarantine guard. The situation in Mazatlan continues to improve slowly. Over a hundred people are isolated and thirty or forty are in the lazaretto, most of whom are recovering. United States Consul Kaiser at Mazatlan is conducting his affairs in the suburbs of that city, the consulate headquarters being in quarantine. He describes the situation there as follows:

While the plague is still with us, yet it is the general opinion that the worst has passed, and that the plague will soon be a thing of the past. We have had one or two new cases daily, but not any new cases for the last three days. The authorities are doing everything in their power to stamp the fever out, and have burned about 500 houses, with all their contents.

The United States Public Health and Marine-Hospital Service reports that the total number of cases from the beginning of the outbreak to March 6 was 302 and the deaths 250.

FOREIGN.

Monument to Dr. Holub.—The Vienna scientific societies are collecting subscriptions for a monument to the physician and African explorer, Dr. Holub, who died Feb. 21, 1902.

The Medical Study Tour in Germany.—The tour this year will commence September 8 at Wiesbaden, and the party will disband at Cassel, September 20. The watering-places to be visited are those in the Rhine and Taunus provinces.

Berlin Medical School Inspectors.—The "Socialist Democratic" party at Berlin demands a separate medical inspector for each of the 260 public schools. The city council has not the funds for such a number, and has decided that 36 are sufficient for the present, with a salary of \$500.

Gold Medal for Pawlow.—The University of Halle has conferred a gold medal on Prof. J. P. Pawlow of St. Petersburg for his research on digestion. His name is pronounced as if spelt Payloff, which is also the pronunciation of the German form, Pawlow, by which he is best known to science.

Circulars for Prophylaxis Against Typhoid and Dysentery.—The German Council of Health has issued two more pamphlets like those it has distributed, which treat of tuberculosis. Koch, Kirchner and Krieger wrote the text. They describe the disease, its cause, treatment, modes of contagion, disinfection, etc.

A traveling post-graduate medical school, to visit all the cities of sufficient size and have clinics and lectures by eminent men is proposed in Germany. The practitioners in the surrounding territory would thus gather for a week or two once a year in their nearest large town. Museums, etc., would be carried.

Prizes for Milk Hygiene.—The Hamburg Exposition of Milk Hygiene offers thirty-one prizes for the best method of cleaning bottles, for the best contribution on the subject of modifying milk for infants, of keeping milk, sterilizing, etc. Also for popularly worded pamphlets on these subjects. The prizes range from \$125 downward.

Compulsory Notification of Diseases in France.—By a decree, signed February 10, the president of the French Republic officially proclaimed the list of diseases for which notification is compulsory, adopting without change the list recommended by the Académie de Médecine. It was given in THE JOURNAL of February 28, p. 612.

Sale of a Medical Practice.—In a recent suit in France and another in Germany, the courts decided that the plaintiff suing for payment for the sale of a medical practice had no

case, as a medical practice can not be bought and sold. In one of the suits the sale of the furnishings and practice had been made by the widow of a physician.

French Congress of Alienists and Neurologists.—The thirteenth annual congress of French alienists and neurologists will be held at Brussels, Aug. 1 to 8, 1903. The subjects announced for discussion are "Catatonia and Stupor," "Histology of General Paralysis," and "Treatment of Agitation and Insomnia in Mental and Nervous Disease."

The Esmarch Medal.—A gold medal was presented to von Esmarch on the occasion of his recent birthday. It is now proposed to give a bronze replica of the medal to persons or societies that have distinguished themselves in the first aid or Samaritan movement, as it is called in Germany. The first medal to be thus bestowed was presented to Prince Henry of Prussia, February 14.

The Social Medical Congress in Austria.—Dissatisfied with the efforts of the existing national medical organizations on behalf of their material interests, the physicians of Austria are organizing a national "Sozial-ärztlichen Congress," to discuss in general conclave the important questions of the day. The *Klin. Therap. Wochenschrift* quotes figures to the effect that 130 local medical associations are sending delegates.

Campaign Against Charlatans in Germany.—The last week brings the account of the condemnation of a faker at Plauen to a fine of \$25 for assuming a pseudo-medical title. At Hochhausen a faith-healer was condemned to ten days' imprisonment, and at Carlsruhe the director of a so-called hydropathic institute was fined \$75 for having treated a cancer subject with cold water alone. The authorities are discussing more stringent regulations against charlatans.

Charlatan Examinations.—A public examination of students trained in two Berlin "nature-healing" establishments was recently held there, the proceedings modeled on those of medical colleges. The report in the "Nature-Healers' Gazette" stated, among other items, that the students "passed a successful examination in the gynecologic examination of twelve male and twelve female patients, the latter suffering from gynecologic affections."

The Bulletin de l'Association Gen. des Medecins de France.—The newly created organ of the French Medical Association starts out with the intention, we are told, to fill in France the place occupied by the *British Med. Journal* in England and *THE JOURNAL* in this country. The French medical press is inclined to look askance at the newcomer, and the *Gazette Medicale de Paris* remarks that there is little chance of its realizing its ambition "unless it gets an American or English brain to take charge of it."

Correspondence.

The Biographic Clinics of Dr. Gould.

CHICAGO, March 14, 1903.

To the Editor:—The medical profession is under many obligations to Dr. George M. Gould, the vigorous editor of *American Medicine*. The last product of his fertile brain and productive pen is the "Biographic Clinics," a book of 233 pages. In writing this wonderful book he has done pioneer work in a most important department of medicine. He has shown conclusively that five of the greatest men in history were the subjects of eyestrain, which was responsible for all the agonies that made the busiest and most useful epochs in their lives a constant misery. The analysis of the symptoms related by themselves or their biographers is so logical that no doubt can be left in the minds of the careful reader concerning the correctness of the author's conclusions. There can be no doubt that thousands are affected in a similar manner to-day, and as any competent oculist can secure the necessary relief this class of patients should be reached by the profession. This little book should be in the hands of every physician and teacher, as it treats of a subject of a medical affection which, when overlooked or neglected, will bring ailments that will make life a constant misery, if not a total failure. N. SENN.

The Identity of Nerve Force and Electricity.

WASHINGTON, D.C., March 9, 1903.

To the Editor:—Referring to the paper of Dr. J. Emmet O'Brien, page 630 et seq. of *THE JOURNAL*, March 7, in which

he claims priority as to the identity of electricity and nerve force, etc., I very respectfully suggest that on reference to the Transactions of the Medical Society of the District of Columbia, of Dec. 5, 1883, it will be found that the general principles of his paper have been long since anticipated by one on "Electricity and Nerve Force" presented by,

Very respectfully yours, JOSEPH T. HOWARD, M.D.

Maternal Impressions.

AIKIN, MICH., March 14, 1903.

To the Editor:—Baby S., a healthy seven-pound female baby, was born at full term on March 1, 1903. She has a prominent birthmark covering the left thumb and upper part of the arm, over the shoulder and slightly down the back. The mother had an accident three months before delivery. She was wearing an outing-flannel gown, the left sleeve of which was lighted from a match, and in a flash an area of the sleeve corresponding to the baby's birthmark was burned.

A. G. BELSHEIM, M.D.

Family Care of the Insane.

LEXINGTON, KY., March 16, 1903.

To the Editor:—Your editorial in the last number of *THE JOURNAL*, on family care of the harmless insane, leads me to suppose that you do not know that it has been continuously in use in Massachusetts since 1885. It was due, I believe, to the efforts of Dr. Henry R. Stedman of Boston, who wrote a most exhaustive paper on the subject. The matter was reviewed at the last meeting of the American Medico-Psychological Association.

GEO. P. SPRAGUE.

Book Notices.

THE MALARIAL FEVERS OF BRITISH MALAYA. Studies from Institute for Medical Research, Federated Malay States. By Hamilton Wright, M.D. (McGill), Director of the Institute for Medical Research, Federated Malay States. Paper. Price 3 shillings net. Philadelphia: P. Blakiston's Son & Co. 1902.

This report, as stated by the author, does not represent an extensive study of malarial fevers of the British portion of the Malay peninsula, but he offers it as a first step, hoping it will call attention to the value of the field to European students of malaria. So far as the existing forms of malaria are concerned, they seem to be largely those met elsewhere. There is a predominance of the malignant tertian type, the mild tertian being only second in frequency. It appears that Europeans seldom contract malaria within their own quarters within the larger centers of population. They can nearly always date their infection to some out-station or jungle work in a specially malarial region. It is noticed as a remarkable fact that in a large prison where one species of anopheles abounds, malaria is almost unknown. The greatest sufferers seem to be the coolies and natives; among them are found the chief figures of morbidity and mortality. The tin mines of the Malay peninsula are ideal fever spots. The natives who live in large centers and neglect the hygienic measures followed by Europeans also suffer to a certain extent, and the native police are to a large extent agents of the transmission of the disorder from one section to another. A policeman breaks down in health in one place and is sent to another locality, which he also infects. This is a point to which Dr. Wright very properly calls the attention of authorities, as it is avoidable. The species of mosquitoes have been studied and the work contains valuable data in regard to prophylaxis and treatment, which he says is needed in these parts of British India. The first essentials are sanitary precautions, hydraulic drainage, clean surroundings and a well-regulated passion for quinin. The larger part of the work is a narration of cases and it concludes with accounts of the aspects of malaria in the different sections, contributed by government surgeons. In the very conclusion of the work an interesting statement is made by one of these that so far as known no case of blackwater fever has ever occurred in the Malay peninsula, notwithstanding the large doses of quinin that are habitually employed. This would seem

to contradict the quinin theory of the production of this disorder.

LEHRBUCH DER OHRENHEILKUNDE. Für Aerzte und Studierende, von Prof. Dr. L. Jacobson und Dr. L. Blau, Ohrenärzten in Berlin. Dritte, neu bearbeitete Auflage des Jacobson-schen Lehrbuches, mit 345 Abbildungen auf 19 Tafeln. Leipzig: Verlag von Georg Thieme. 1902.

Professor Jacobson, whose work for sixteen years at the Ear Clinic of the University of Berlin gave him a wide acquaintance, and whose contributions to Schwartz's "Archiv" gave him a name in the otologic world, addresses a larger medical audience in this volume of more than 500 pages. It is intended for both students and general practitioners, and the details of more interest to the specialist are in smaller type. There are 345 illustrations, of which there are a number of new ones in this, third, edition (showing the radical operation, the recent plastic methods following the former, the method of exposing the middle cranial fossa and the transverse sinus, ligation of the jugular vein, and lumbar puncture).

The report of the complete literature is brought up to the end of the year 1901. Dr. Blau's command of this part of the work is apparent. It is to be expected, because of his being chief editor of the *Encyclopaedie der Ohrenheilkunde*. The rapid progress of the specialty, the authors state, caused them to make additions to every department. The greatest changes are to be found in the chapters on normal hearing; the methods of examination; the differential diagnosis between diseases of the sound conducting and perceiving apparatus; on pneumatic massage of the middle ear; on chronic middle ear suppuration; on the "dry chronic middle ear catarrh"; on trephining the mastoid process, and on the radical operation; on deaf-mutism; on otitic diseases of the brain, meninges and sinuses; on otitic pyemia and septicemia; on aural complications in scarlet fever, diphtheria, locomotor ataxia, and tuberculosis. Therapeutics is freely discussed. The chapter on the value of the various methods of testing the hearing and of making exact differential diagnoses between diseases of the sound perceiving and conducting apparatus is written by Professor Jacobson alone. His exceedingly critical review of this important subject is of the greatest interest.

THE MIND OF MAN. A Text-Book of Psychology. By Gustav Spiller. Cloth. Pp. 552. Price, \$2.75 net. London: Swan Sonnenschein & Co., Ltd. New York: The Macmillan Co. 1902.

The study of psychology is a profitable side-issue for the physician to take up for many reasons. The present volume is a contribution that most medical readers will find intelligible and interesting. Its treatment of the subject is that of the sensational school and there are probably many of us who will disagree with the author in some of his views and conclusions. The rejection of the noumenal ego will be to some of us a little hard to accept and his argument for it from the facts of insanity appear fallacious, but it seems to be the outcome of the line of reasoning of a large number of psychologic thinkers. Some subjects are very rapidly touched on and the treatment seems to us unsatisfactory, for instance, his few remarks on the subject of character. The characteristic of the author is self-confidence, which is very noticeable throughout in his assertiveness and his comments on other authors. He, however, ably handles his subject and some portions of the work are very interesting reading. His study of Shakespeare, for example, will be to some a novel treatment of the subject. The style of the book is interesting and it is throughout intelligible. It is certainly not the heavy reading which some works on psychology are found to be.

DISINFECTION AND DISINFECTANTS. A Practical Guide for Sanitarians, Health and Quarantine Officers. By M. J. Rosenau, M.D., Director of the Hygienic Laboratory and Passed Assistant-Surgeon U.S. Public Health and Marine-Hospital Service, Washington, D. C. Illustrated. Cloth. Pp. 353. Price, \$2.00 net. Philadelphia: P. Blakiston's Son & Co. 1902.

Dr. Rosenau has furnished a convenient manual of disinfection which can not fail to be of use to physicians, health officers and others, in fact, to everyone who has occasionally the need of such a work. He says he has made mistakes like everyone else in learning what, how and when to disinfect, and the book is written to aid others who have to battle with infection and communicable diseases. It is based on experience

as well as knowledge gained otherwise and has, therefore, its special value as a work of a practical expert. It is a book the substance of which ought to be familiar to every physician and especially to every local health officer in the country.

PRACTICAL OBSTETRICS. A Text-Book for Practitioners and Students. By Edward Reynolds, M.D., Visiting Surgeon to the Free Hospital for Women, and Franklin S. Newell, M.D., Assistant in Obstetrics and Gynecology in Harvard University. Illustrated with 252 Engravings and 8 Colored Plates. Cloth. Pp. 553. Price, \$3.75 net. Philadelphia and New York: Lea Brothers & Co. 1902.

This volume is the result of the practical success of an earlier work by one of the authors, which did not attempt to go so extensively into the subject as does the present. It is a convenient, reasonably condensed, and a practical handbook on the subject. It is thoroughly illustrated and has an excellent index. While not so full and complete as many other works on the subject, we believe, to a large class, it will be found even more popular because of its conciseness. The authors say, if it appears to settle most points of practice dogmatically, the fault has been intentionally committed on the belief that the description of one justifiable plan of treatment is more likely to be of advantage to the student than the extended discussion of the advantages and disadvantages of many methods. This explains the standpoint from which the book has been written. It is practical, and elegantly gotten up.

A HANDBOOK OF MATERIA MEDICA, PHARMACY AND THERAPEUTICS, Including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Practical Pharmacy, and Minute Directions for Prescription Writing. By Samuel O. L. Potter, A.M., M.D., M.R.C.P. Lond., Formerly Professor of the Principles and Practice of Medicine in the Cooper Medical College of San Francisco. Ninth Edition, Revised and Enlarged. Cloth. Pp. 951. Price, \$5.00. Philadelphia: P. Blakiston's Son & Co. 1902.

The author has added many things to what appeared in previous editions, some from his experience in the tropics while serving with the Eighth Army Corps and at general headquarters in the Philippines. In this respect it has an advantage over some other works that have recently appeared. A number of articles in the work have been rewritten and others expanded by incorporation of new items. The work, as a whole, has been, as the author says, critically revised.

Marriages.

THOMAS J. REID, M.D., to Miss Caroline Wolcott, both of Chicago.

PHILIP NEWMARK, M.D., to Miss Marie C. Fleck, both of Los Angeles, Cal., March 15.

EDWARD LEE BEATIE, M.D., Kansas City, Mo., to Miss Emma Gertrude Rockwell of Chicago, March 10.

SAMUEL A. HUFFMAN, M.D., Chesterfield, Ill., to Miss Clyde McQuerry of Greenfield, Ill., February 26.

ROBERT J. HEAVENRIDGE, M.D., to Miss Cora McClenning, both of Hannibal, Mo., at New London, Mo., March 2.

JOHN R. McDILL, M.D., Manila, P. I., formerly of Milwaukee, Wis., to Miss Anna Josephine Neale of San Diego, Cal., at Manila, January 27.

Deaths.

William Phipps Munn, M.D. University of Michigan, Ann Arbor, 1886, died at his home in Denver, March 12, from hemorrhage of the lungs, aged 38. He was born in Pittsburg, and after his graduation in medicine practiced for four years in Allegheny. He was then compelled on account of ill-health to go to Colorado, and settled in Denver. He entered immediately into college work and was given the chair of histology and pathology in Gross Medical College. In 1892 he was made professor of genito-urinary diseases and clinical surgery in the University of Denver, and occupied this chair until 1897. He was a member of the American Medical Association; president of the Colorado State Medical Society in 1900-1901; member and some-time president of the Denver and Arapahoe Medical Society; health commissioner of Denver 1895 to 1899; for ten years a member of the board of health, and recently its president. He was always active in all that pertained to the good of the medical profession and was one of the leaders in the work of reorganization in Colorado.

Arthur Vallee, M.D. Laval University, Quebec, 1875, who filled in turn the chairs of toxicology and legal medicine, obstetrics, deontology, history of medicine and mental diseases; a member of the Psychologic Society of Paris, and the Society of Mental Medicine of Belgium; vice-president of the Provincial Medical Council and for a long time superintendent of the Beauport Insane Asylum, Quebec, died at his home, January 23, after an illness of four months, aged 54.

Charles Henry Ohr, M.D. University of Maryland, Baltimore, 1834, mayor of Cumberland, Md., for seven years; acting assistant surgeon U. S. Army during the Civil War; member of state senate; vice-president and president of the Medical and Chirurgical Faculty of Maryland, died at his home in Cumberland, March 3, aged 92. He retired from practice several years ago.

George W. Bishop, M.D. Jefferson Medical College, Philadelphia, 1848, a practitioner of medicine until 1865, afterward state senator from Worcester County, Md., assistant treasurer of the United States at Baltimore, and later treasurer of Worcester County, died suddenly from heart disease at his home in Snow Hill, Md., March 6, aged 76.

Joseph Christopher Shepard, M.D. New York University, 1860, who afterward studied in France and then served throughout the Civil War on the Confederate side, one of the most prominent physicians of Wilmington, N. C., died at his home in that city, March 5, from heart disease, after an illness of ten days, aged 63.

Henry R. Porter, M.D. University of Georgetown, Washington, D. C., 1872, of Bismarck, N. D., died at Agra, India, March 3, from heart disease, while making a trip around the world, aged 55. He was an acting assistant surgeon in the Army, and served with Reno in the campaign in which Custer was killed.

John R. Casey, M.D. St. Louis Medical College, 1857, for nearly half a century a practitioner of Joliet, Ill., for ten years surgeon to the state penitentiary, a member and once president of the Will County Medical Society, died at his home in Joliet, March 1, from diabetes, after a long illness, aged 68.

James J. Larkin, M.D. Chicago Medical College, 1880, died suddenly at his home in South Chicago, from apoplexy, March 12, aged 49. He was a member of the Chicago Medical Society and Physicians' Club, and was surgeon to the South Chicago Hospital.

William Campbell Goodlett, M.D. University of Pennsylvania, Philadelphia, 1849, formerly a surgeon in the United States Army and in the Confederate service, died at his home in St. Louis, March 1, after an illness of one year, aged 80.

Ashley A. Webber, M.D. New York University, 1888, an authority on gunshot wounds and an expert of national repute with the rifle and revolver, died from Bright's disease at his home in Brooklyn, February 19, aged 39.

Enoch P. Jones, M.D. Eclectic Medical Institute, Cincinnati, 1854, died at his home in Marion, Ind., from paralysis, after an illness of two months, February 26, aged 75. He retired from practice in 1900.

Levi B. Ward, M.D. Kentucky School of Medicine, Louisville, 1896, member of the Colorado State and Fremont County medical societies, died at his home in Canon City, Colo., February 24, aged 37.

James Henry Dugan, M.D. College of Physicians and Surgeons, Chicago, 1899, of La Salle, Ill., died March 2, after an operation for appendicitis, at Mercy Hospital, Chicago, aged 30.

David F. Rupp, M.D. Kansas City Medical College, 1879, health officer of San Diego, Cal., died at his home in that city, February 25, from pneumonia, after an illness of ten days, aged 53.

James C. Patton, M.D. Medical College of Evansville, Ind., 1850, a veteran of the Civil War, died at his home in Francisco, Ind., where he had practiced for 53 years, February 19, aged 76.

Charles F. Patterson, M.D. Jefferson Medical College, Philadelphia, 1878, died at his home near Coal Grove, Ohio, February 10, from consumption, after an illness of many months.

George W. Smith, M.D. Rush Medical College, Chicago, 1894, of Monongah, W. Va., died at the Cook Hospital, Fairmont, W. Va., February 26, after an extended illness, aged 28.

Alexander Stanley Hancock, M.D., died at his home in New York City, February 28, from starvation due to a cancer of the throat, aged 65. He retired from active practice in 1893.

Charles F. Rideout, M.D. Medical School of Maine, Bowdoin College, Brunswick, 1884, died at his home in Bath, Maine, February 28, from pneumonia, after a brief illness, aged 45.

Henry Edward Newell, M.D. Long Island College Hospital, Brooklyn, 1873, died at his home in West Derry, N. H., February 24, after a long and painful illness, aged 51.

Edwin E. McCall, M.D. Baltimore Medical College, 1894, health officer of Lima, Ohio, died at his home in that place from uremia, after a short illness, March 23, aged 37.

John N. Kendig, M.D. University of Maryland, Baltimore, 1898, of Akron, Ohio, died at a hospital in Cincinnati, Ohio, February 26, from cerebrospinal meningitis, aged 28.

Theodore A. Grover, M.D. Starling Medical College, Columbus, 1869, formerly of Pittsburg, Pa., died suddenly at Wilmington, Del., March 6, from paralysis, aged 63.

John Graham, M.D. Eclectic Medical Institute, Cincinnati, 1878, died at his home in Plainville, Ill., February 23, from kidney disease of long standing, aged 65.

Francis Rourk, M.D. University of Maryland, Baltimore, 1865, died suddenly at his home in Detroit, Mich., February 22, aged 61. He was a veteran of the Civil War.

A. D. Griffin, M.D., who practiced medicine in Keokuk and Benton counties, Iowa, for more than half a century, died at his home in Vinton, Iowa, February 25.

J. R. Simms, M.D. Medical School of the Valley of Virginia, Winchester, 1849, died suddenly, February 27, at his home in Linden, Cal., aged 82.

William H. Baird, M.D. Tulane University, New Orleans, 1869, of Oxford, Miss., died at Jackson, Tenn., March 5, after an invalidism of four months.

Alexander C. Peters, M.D., for more than forty years a practitioner of Newark, N. J., died from paralysis at his home in that city, March 1, aged 63.

T. W. Wright, M.D. Keokuk (Iowa) Medical College, died at his home in Farmington, Iowa, from typhoid fever, March 1, after an illness of two weeks.

Daniel C. Dickinson, M.D. Medical College of Virginia, Richmond, 1878, died at his home in Union Hall, Va., March 6, after a brief illness, aged 45.

Henry W. Richter, M.D. New York University, 1861, died at his home in Brooklyn, N. Y., March 4, from paralysis, after a year's illness, aged 63.

William F. G. Noetling, M.D. University of Heidelberg, Germany, 1842, died at his home in East Hampton, Conn., February 28, aged 83.

Richard D. Greene, M.D. Bellevue Hospital Medical College, New York, 1867, died at his home in Lexington, Ky., February 25, aged 63.

Lester Joslin, M.D. Cleveland Medical College, 1867, died at his home in Ionia, Mich., February 26, from a carbuncle, after a short illness.

William J. Enders, M.D. Miami Medical College, Cincinnati, died at his home in Hamilton, Ohio, March 7, from pneumonia, aged 26.

Rutherford R. Price, M.D. Western Pennsylvania Medical College, Pittsburg, 1900, of Toronto, Ohio, died at Phoenix, Ariz., February 26.

Elliott W. Leech, M.D. Kentucky School of Medicine, Louisville, 1891, died at his home in Shelbyville, Ind., March 5, aged 70.

L. W. Bishop, M.D. Medical College of Ohio, Cincinnati, 1870, died at his home in Batavia, Ohio, February 27, from paralysis.

John N. Davis, M.D. Eclectic Medical Institute, Cincinnati, 1880, of Boulder, Colo., died at the Denver Hospital, February 22.

Samuel C. Hanford, M.D. New York University, 1845, died at his home in Hempstead, Long Island, N. Y., February 24, aged 80.

William Johnson, M.D. Rush Medical College, Chicago, 1880, of Grant City, Mo., died at Boulder, Colo., February 17.

Reginald H. Reid, M.D. Detroit College of Medicine, formerly of Detroit, died at Hils, Hawaii, recently, aged 28.

Edward R. Kittoe, M.D. Chicago Medical College, 1869, died suddenly at his home in Galena, February 18, aged 57.

William H. Koogler, M.D. University of Iowa, Iowa City, 1873, died at his home in What Cheer, Iowa, February 13.

James M. Glass, M.D. Fort Worth (Texas) University, 1901, of Poolville, Texas, died recently at Fort Worth.

Deaths Abroad.

Dr. Michaux, surgeon of the Messageries Maritimes steamer *Laos*, died at sea from the effects of atropin administered by accident, January 21.

Rafael Zaldívar, M.D. National University, Guatemala, statesman, and twice president of Salvador, and more recently minister of that republic in Washington, died in Paris, March 3.

F. Cramer, M.D., Wurzberg, the well known German surgeon, died from influenza pneumonia at his home in Wiesbaden, in February, aged 56—A. J. A. Guimaraes, M.D., Bahia, assistant superintendent of the Federal Laboratory of Bacteriology, died at Rio Janeiro, February 12, aged 32—D. Cervesato, M.D., Padua, private docent and professor of pediatrics at Padua and later at Bologna, died at his home from appendicitis, January 21, aged 51. He is the author of numerous works on his specialty and other subjects.

Dr. M. Weiss died at Vienna, aged 71. He resided in Prague or its vicinity until 1897, and was prominent in all matters affecting the general welfare of the profession. He was also a frequent contributor to medical literature, and honorary member of several medical societies—Dr. Emil Gold, director of the Model Hospital at Bielefeld, which owes its preeminence to his efforts, died recently, aged 44, from the effects of a stroke of paralysis last year, due to overwork—C. Gallozzi, M.D., professor of surgery and dean of the medical department of the University of Naples, died there February 11, aged 84, from cerebral embolism—F. Loesch, M.D., professor of internal medicine at Kiev, aged 63, died from apoplexy. He has published numerous works in Russian and foreign medical literature.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

THE HORSELESS CARRIAGE

SPOKANE, WASH., Feb. 24, 1903

In THE JOURNAL of February 14 a communication is published from Dr. Oscar S. Gilbert, Boulder, Colo., requesting information on the use of the automobile by the physician, and I here give my experience.

Fifteen months ago I purchased a light runabout of a standard make, weighing about 850 pounds, having, as claimed by the maker, a $4\frac{1}{2}$ horse power gasoline engine, costing laid down here \$750. I used this wagon eleven months (less one month during which it was laid up for repairs), running it during that period about 6,000 miles, most of it on gravelly roads, which were comparatively level, and muddy only two months.

Repairs alone during that period cost something over \$25 a month, gasoline for the same period about \$6 a month. After the first few months I had sufficiently mastered the art of navigation of a gasoline engine to enable me to feel reasonably sure that so far as my engine was concerned I would be able to return home from almost any trip I took.

While this horse power is not sufficient to take a wagon of this weight up a grade to exceed 15 per cent with any degree of rapidity, by careful usage and stopping occasionally to speed up the motor, a much heavier grade may be made.

Before the eleven months were out I had spent at least another \$100 in replacing worn out parts, such as chains, front and rear sprockets, tires, etc. With these parts, I expect to have another two summers' use simply as a pleasure rig for my wife, by avoiding hard and muddy trips.

Three months ago I purchased a phaeton of a standard make weighing about 1,100 pounds, with three cylinders and guaranteed ten horse power, large wooden wheels, top, and all the conveniences of an up to date doctor's rig, costing here \$1,100. This wagon has been run through the severe muddy winter weather, but I have had considerable annoyance from break downs of small parts, none serious enough to lay me up for more than a few hours, but serious enough to have left me stranded high and dry had I been making country trips instead of city runs, where, by the use of the telephone, the repair man can always be gotten quickly.

I had hoped when I purchased this wagon to be spared such small annoyances, but for some reason unknown to me the manufacturers have not yet sufficiently perfected their wagons to accomplish this, as has been proven to me both by my own experiences and

those obtained from reading the physician's number of a late automobile journal.

There appear to be so many little break down possibilities, that even now I would not feel safe to leave the city limits very far with either of my wagons. Pneumatic tires, even the best, are liable at any time to be punctured or perforated by pressure or nails, and it is no small matter to repair them outside of a well-regulated shop. The sun and planet transmission gear, the one generally in use, is a very complicated affair and often a source of trouble from breakage.

The lubrication requires constant care and is liable at any time to become a source of annoyance. The usual chain transmission is a delicate affair, and likely to break or stretch. The rear sprocket wheel, being a differential gear, may at any time cause trouble by breaking of pins or small parts. The matter of circulation of water in the small rig for cooling the engine is most important, the process being by centrifugal pump, which, with its connections, may at any time get out of repair, and where there is no water circulating, the packing in the cylinder head soon burns out, and it is laid up for a few hours, even if you are willing to stop on the road and pack your own engine. The sparking arrangement in either rig is at any time liable to give trouble.

I could go on for a half hour describing troubles that may be had by the automobilist, but think I have given a sufficient number to prove the necessity of keeping the wagon within a reasonable distance of a skilled mechanic and gasoline engineer, whose almost constant attention is required to get good service out of it.

There is no doubt that much time can be saved on the road and many more calls made with an automobile than with any form of horse and wagon, but to accomplish these results considerable experience, expense, and annoyance must be had. I have no doubt that there will be made in the near future a wagon free from many of the annoyances and dangers which I have outlined, but until then, my advice to physicians who expect to run their wagons at all times on all kinds of roads and places, would be not to buy an automobile.

Yet, to a man able and willing to pay for the extra expense mentioned above, I believe it will bring him more pleasure and exhilarating exercise than the same amount of money invested in any other way, but in buying one for use off of the paved road, get a gasoline rig in which there is at least a horse power for each one hundred pounds weight of the wagon, and the entire weight of the wagon should not much exceed one thousand pounds. Get one with double detachable tires, with wooden wheels, and a two or three cylinder gasoline engine, with a cylinder head which screws in, and does not require packing, avoid centrifugal pumps and vibrators also if possible, and expect to use it at least three months before a sufficient knowledge of the wagon has been gained to get much pleasure out of it. The electric and steam wagons are still more expensive and difficult to operate, the latter requiring too much time for starting and water and gasoline for running.

C. P. THOMAS.

State Boards of Registration.

The Modified Montana Medical Law.

Two bills bearing on the medical practice law of Montana have passed through the legislature of that state; one making provision for appeals, providing that all appeals against the decisions of the board of medical examiners shall be tried before a jury of six physicians, not less than two of whom shall be of the same school of medicine as the appellant. This act takes out of the hands of the lay judges and juries the decision of questions as to professional conduct, standing, etc., of those who have come under the penalties provided for by the law.

The other amendment provides for reciprocity. It changes the section of the law that lays down the conditions under which licenses can be granted by inserting after the provision for granting of said license the following:

Provided, however, that in all cases where an applicant for a certificate under this Section shall produce and exhibit to said board of examiners a certificate from a board of medical examiners, duly appointed and existing under the laws of any state of the United States and recognizing certificates or licenses from this state certifying to the fact that the person presenting such certificate is duly and well qualified to practice medicine and surgery in the state issuing said certificate, and that said board issuing said certificate has subjected the applicant to a thorough examination to ascertain this fact, or certifying to the fact that the person presenting such certificate is duly and well qualified to practice medicine and surgery in the state issuing said certificate, and to the further fact if such is the case, that said applicant was exempt from examination under the provisions of the law of said state by reason of his residence in said state in the active practice of medicine and surgery at the time of the passage in said state of said law requiring the examination of applicants to practice medicine and surgery, he or she may, at the discretion of said board of examiners, on paying the fee required of applicants for examination under the provisions of Section 607 of this article, and otherwise complying with all the requirements of this article, receive from said board of examiners a certificate to practice medicine and surgery within this state and on holding said certificate with the county clerk of the county in

which he resides, as is provided in Section 604 of this article, he shall be a legally qualified practitioner of medicine and surgery in this state.

Association News.

New Members.

New members for the month of February:

ALABAMA.

Gresham, W. A., Russellville.
Hargrove, R. J., Tuscaloosa.
Kernachan, W. J., Florence.
Lightfoot, P. M., Crosskeys.
Persons, H. S., Montgomery.
Robertson, J. W., Brundidge.
Oates, W. H., Yellow Pine.

ARKANSAS.

Barlow, E. E., Dermott.
Hipolite, W. W., DeVall's Bluff.
Hume, H. C., Paragould.
Pope, M. Y., Monticello.
Smith, R. N., Augusta.
Stanley, A. C., Tillar.
Murphey, N. E., Clarendon.
Hebert, G. A., Hot Springs.
Waldrop, J. G., Wheatley.

CALIFORNIA.

Goodfellow, G. E., San Francisco.
Brown, M. W., Alameda.
Key, J. W., Pinole.
Wilder, E. M., Sacramento.

COLORADO.

Hoagland, H. W., Colorado Sprgs.
Sipe, W. P., Cripple Creek.

CONNECTICUT.

Covley, M. L., Waterbury.

DISTRICT OF COLUMBIA.

Baker, R. W., Washington.
Boyd, J. C., Washington.
Belt, E. O., Washington.
Mullins, J. B., Washington.
Muncey, E. B., Washington.
Thompson, E. D., Washington.
Wagner, W. F., Washington.
Walsh, F. C., Washington.

FLORIDA.

Sutherland, Wm., High Springs.
Jenkins, E. E., Palatka.

ILLINOIS.

Behrendt, A. J., Chicago.
Decker, Adolph, Chicago.
Getz, Michael, Chicago.
Rawlings, I. D., Chicago.
Neff, J. M., Chicago.
Loewy, Arthur, Chicago.
Windell, U. G., Chicago.
Benson, Newton J., Vienna.
Rodefeld, H. H., Quincy.
Schreiber, J. B., Savanna.
McClanahan, V. A., Viola.
Weimer, E. A., Pekin.

INDIANA.

Schlicker, A. G., East Chicago.
Gemmell, H. C., Indianapolis.

INDIAN TERRITORY.

Berry, V., Wetumka.
Warfield, F. E., Holdenville.

IOWA.

Doty, E. A., Oxford.
Harriman, J. W., Iowa City.
Kembel, C. L., Bloomfield.
Mullin, J. P., Iowa City.

KANSAS.

Brockett, E. M., Topeka.
Freeman, J. D., Topeka.
Jones, H. T., Lawrence.
Jones, G. W., Lawrence.
Williamson, H. E., Olathe.

KENTUCKY.

Foster, R. L., Cosky.
Hord, W. H., Orangeburg.
Harper, J. H., Ibex.
Kobert, C. B., Lebanon.
Ferguson, R. V., Hadensville.
McGary, J. R., St. Mary's.
Martin, J. G., Ashland.
Moss, M. McT., Franklin.
Brand, Leslie, Maysville.

LOUISIANA.

Boudreau, W. R., Washington.
Alexander, A. D., Mer Rouge.
Kearney, F. J., Plaquemine.
Palne, R. B., Mandeville.
Scales, J. L., Alden Bridge.
Miller, V. A., Lake Arthur.

Elliott, Jr., J. B., New Orleans.
Menage, H. E., New Orleans.
O'Kelley, J. P., New Orleans.

MARYLAND.

Allen, L. M., Baltimore.
Clewell, A. A., Baltimore.
Hadel, A. K., Baltimore.
Johnston, R. H., Baltimore.
Pearce, W. M., Baltimore.
Smith, R. P., Baltimore.
Mitchell, G. W., Baltimore.
Marshall, H. T., Baltimore.
Taylor, R. T., Baltimore.
Ohle, H. C., Baltimore.
Requardt, W. W., Baltimore.
Wolf, W. B., Baltimore.

MASSACHUSETTS.

Hammond, Philip, Boston.
Page, C. G., Boston.
Paul, L. G., Boston.
Redfearn, Jos., Hudson.
Swain, Howard T., Boston.
Wilson, H. E., Chester.

MICHIGAN.

Bursman, J., Altona.
Dusseau, S. V., Erie.
Eshleman, Lillian, Battle Creek.
Holdom, Isabella, Detroit.
Harris, Roland H., Battle Creek.
Leuschner, Richard, Mt. Clemens.
Scott, T. B., Owosso.
Morse, J. F., Battle Creek.
Tonkin, E. W., Edwardsburg.
Wilhelm, J. M., Traverse City.
Waldron, F. R., Ann Arbor.
Wilkinson, A. M., St. James.

MISSISSIPPI.

Butler, J. T., Brookhaven.
Catchings, C. E., Woodville.
Darrington, John, Yazoo City.
Eckford, J. W., Starkville.
Purser, Thos., McComb.
Scudder, W. H., Maysville.
Saunders, J. S., Coffeeville.
Martin, Van Buren, Bogue Chitto.

MISSOURI.

Armstrong, G. L., St. Louis.
Burrill, C. W., Kansas City.
Burford, C. E., St. Louis.
Hopkins, T. A., St. Louis.
McVey, T. A., St. Louis.
Chamberlain, G. M. E., Rockport.

NEBRASKA.

Condon, A. P., Omaha.
Groti, Marie L., Ponca.
McKean, J. W., Omaha.
Upjohn, W. C., Omaha.

NEW JERSEY.

Eagleton, W. P., Newark.
Henry, Geo., Raritan.
Knowles, F. E., South Orange.

NEW YORK.

Boyd, A. S., New York City.
Culver, D. J., Harrisville.
Dennis, C. W., Goshen.
Fielder, F. S., New York City.
Lester, Elias, Seneca Falls.
Silverman, Maurice J., New York.
McKay, Jas., Potsdam.
Bacon, C. B., Waterloo.

NORTH CAROLINA.

Pate, W. T., Gibson.
Headen, W. E., Morehead City.
Stansill, J. M., Rockingham.

OHIO.

Casello, J. B., Cincinnati.
Moss, E. H., Cincinnati.
Warner, W. C., Cleveland.
Dempster, A. C., Uhrichsville.
Hughes, L. H., Dennison.
Wagner, P. M., Canal Dover.

OKLAHOMA.

Clutter, W. H., Oklahoma City.
Patchen, C. C., Chandler.

PENNSYLVANIA.

Alleman, K. M., Hanover.
Allison, T. B., Tarentum.
Bitler, B. E., Potts Grove.
Dolan, W. K., Scranton.

Snively, H. B., Lancaster.
Rebuck, Chas. S., Harrisburg.
Sandblad, A. G., McKeesport.
Gardner, F. G., Pittsburg.
Stuart, E. C., Pittsburg.
Christlan, H. M., Philadelphia.
Shoemaker, W. T., Philadelphia.
Singer, B. L., Philadelphia.

SOUTH CAROLINA.

Campbell, J. W., Clover.

SOUTH DAKOTA.

Bobb, B. A., Mitchell.
Vaughn, Jas. B., Castlewood.

TEXAS.

Broadstreet, S. C., Mt. Pleasant.
Crouse, H. W., Victoria.
Collom, S. A., Kennard.
Dorbandt, J. D., Lampasas.
Dorris, T. B., Grape Vine.
Emery, F. D., Dallas.
Higginbotham, W. L., Howe.
Krueger, A. G., Caldwell.
Taylor, Holman, Marshall.
Vaughan, Z. E., Waskom.
Williams, T. A., Houston.
White, David, Honey Grove.

UTAH.

Hammond, E. D., Salt Lake City.

VERMONT.

Lyman, W. A., Burlington.

VIRGINIA.

Blindewald, O. C. A., Portsmouth.
Drewry, M. R., Cascade.

WASHINGTON.

Rust, H. H., Enumclaw.
Slater, H. H., Deer Park.
Scamell, J. W., Aberdeen.

WEST VIRGINIA.

Haught, F. T., Mona.

WISCONSIN.

Buchan, S. C., Racine.
Dearholt, H. E., Milwaukee.
Hopkinson, Lawrence, Milwaukee.
Smith, C. M., Evansville.
Scott, W. F., Port Washington.
McVain, H. A., Poy Sippi.
Myers, Albert W., Milwaukee.
Walbridge, F. E., Milwaukee.

WYOMING.

Hall, E. A., Rock Springs.

Medical Organization.

Hempstead County (Ark.) Medical Society.

This society was organized February 13 by Dr. J. S. Corn, Nashville, counselor of the Sixth District Arkansas Medical Society, and elected the following officers: Dr. Hosea J. F. Garrett, president; Dr. B. S. Rhea, vice-president, and Dr. J. H. Weaver, secretary and treasurer.

Box Butte County (Neb.) Medical Society.

In accordance with the suggestion of the American Medical Association and the Nebraska State Medical Society the physicians of the county met in Alliance, February 27, and organized this society, with Dr. Harvey H. Bellwood, Alliance, president; B. F. Bettelheim, vice-president, and Dr. J. E. Moore, Alliance, secretary and treasurer.

Coffee County (Tenn.) Medical Society.

Dr. James B. Murfree, Jr., Murfreesboro, met the physicians of Coffee County at Manchester and assisted them to reorganize the county society with the following officers: Dr. James B. Cowan, Tullahoma, president; Dr. A. F. Vincent, Manchester, vice-president; Dr. G. W. Taylor, Summitville, secretary and Dr. Erin P. Vaughan, Manchester, treasurer.

Lewis County (Ky.) Medical Society.

The physicians of Lewis County held a meeting at Vanceburg, March 11, and organized a county society, after a talk by Dr. Joseph E. Wells, Cynthiana, counselor for that district, adopting, without change, the plan of organization of the American Medical Association. Dr. Lewis A. Grimes, Concord, was elected president, and Dr. Aaron F. Hill, Vanceburg, secretary.

Greenup County (Ky.) Medical Society.

The physicians of Greenup County met at Greenup, March 12, and organized a county society, after an address from Dr. Joseph E. Wells, Cynthiana, district counselor. The plan of organization of the American Medical Association was adopted without change, and the following officers were elected: President, Dr. A. A. De Bard, and secretary, Dr. Romulus C. Biggs, both of Greenup.

Wayne County (N. Y.) Medical Association.

Physicians of the county met at Lyons, February 12, and organized a new county medical association to be in affiliation with the New York State Medical Association and the American Medical Association. The following officers were elected: Dr. James W. Putnam, Lyons, president; Dr. Mary A. Brownell, Newark, vice-president; Dr. George S. Allen, Clyde, secretary, and Dr. Darwin Colvin, Clyde, treasurer.

Bracken County (Ky.) Medical Society.

The physicians of Bracken County met at Brooksville, March 10, and after listening to an address by the counselor of the district Dr. Joseph E. Wells, Cynthiana, organized a county society, with Dr. David J. Wallin, Brooksville, president and Dr. Vannie E. Smith, Powersville, secretary. The

society adopted without change the constitution and by laws prepared by the American Medical Association

Caldwell County (Ky.) Medical Society.

The members of the medical profession of Caldwell County met at Princeton, March 12, and after a very interesting and instructive address by Dr. William W. Richmond, Clinton, president of the Kentucky State Medical Association, formed a county society, electing Dr. R. S. Coleman president and Dr. R. Woods Ogilvie secretary, both of Princeton. The constitution and by-laws of the American Medical Association were adopted without change.

Plaquemines Parish (La.) Medical Society.

The medical fraternity of Plaquemines Parish met at Pointe à la Hache on February 5, and organized a parish society, in affiliation with the Louisiana State Medical Association. Dr. John N. Thomas, Quarrintine, was elected president, Dr. Valery O. Schayot, Pointe à la Hache, vice president, Dr. J. F. Buquoi, Pointe à la Hache, secretary-treasurer. The society adopted the constitution and by-laws recommended by the American Medical Association for component societies.

Cincinnati Academy of Medicine.

The annual election, held March 2, resulted as follows. President, Dr. Byron Stanton, vice-presidents, Drs. John L. Cleveland and Burwell P. Goode, secretary, Dr. Stephen E. Cone, treasurer, Dr. Magnus A. Tate, and librarian, Dr. Arch I. Carson. At the previous meeting, held February 23, the academy so changed its constitution as to render it the County Medical Society of Hamilton County, to affiliate it with the state and national associations and to allow any non-sectarian practitioner of medicine to become a member.

Societies.

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, FIFTY-FOURTH ANNUAL MEETING, NEW ORLEANS, MAY 5-8

Florida Medical Association, St. Augustine, April 8
Western Ophthalmological and Oto-Laryngological Association, Indianapolis, April 9-11
Tennessee State Medical Society, Nashville, April 11-16
Medical Association of Georgia, Columbus, April 15
South Carolina Medical Association, Sumter, April 15-16
Iowa State Medical Society, Sioux City, April 15-17
Medical Association of the State of Alabama, Talladega, April 21
Medical Society of the State of California, Santa Barbara, April 21
Mississippi State Medical Association, Greenville, April 21-23
Medical Association of the State of Missouri, Excelsior Springs, April 21-23
Kentucky State Medical Society, Louisville, April 22-24, 1903
Texas State Medical Association, San Antonio, April 28
Louisiana State Medical Society, New Orleans, April 28-30
Medical and Chirurgical Faculty of Maryland, Baltimore, April 28-30
Nebraska State Medical Society, Lincoln, April 28-30
Illinois State Medical Society, Chicago, April 29-May 2
Arkansas Medical Society, Jonesboro, April 30-May 2

Placer County (Cal.) Medical Society.—At the annual meeting held at Auburn, February 14, Dr. Charles H. Bulson, Lincoln, was elected president, and Dr. Robert F. Rooney, Auburn, secretary.

Platte County (Neb.) Medical Society.—At its annual meeting in Columbus, February 26, Dr. David T. Martyn, Columbus, was elected president and Dr. Jerome C. McKinley, Humphrey, secretary.

Chattanooga (Tenn.) Medical Society.—At the annual meeting, Dr. William L. Nolen was elected president; Dr. Robert H. Tatum, vice president, Dr. Joseph W. Johnson, secretary, and Dr. Samuel I. Yarnell, treasurer.

Worth County (Iowa) Medical Society.—At the annual meeting, February 10, at Northwood, Dr. Samuel R. Rice, Northwood, was elected president; Dr. Norman W. Phillips, Manly, vice president, and Dr. J. Herbert Darey, Northwood, secretary.

Yakima County (Wash.) Medical Society.—On February 24 the society held its annual meeting in North Yakima and elected Dr. B. A. Owens Adams, North Yakima, president, Dr. W. H. Carver, secretary, and Dr. H. R. Wells, North Yakima, treasurer.

Memphis and Shelby County (Tenn.) Medical Society.—At the annual meeting and banquet held in Memphis, March 3, Dr. Bennett G. Henning was elected president; Dr. Edwin Williams, vice president, and Dr. James L. Barton, secretary, all of Memphis.

Medico-Chirurgical College (Philadelphia) Alumni Association.—At the annual meeting, January 10, in Philadelphia, Dr. George W. Pfiffm was elected president; Dr. Stillwell C. Burns, secretary and Dr. Emanuel S. Gans, treasurer, all of Philadelphia.

Tri County (Neb.) Medical Society.—Physicians of Dixon, Dakota and Thurston counties met at Lameison, February 25, and organized a society, with Dr. James M. O'Connell, Ponca, president; Dr. Charles H. Maxwell, Dakota City, vice president, and Dr. Robert Q. Rowse, Wakefield, secretary and treasurer.

Franklin County (Ohio) Medical Society.—This society met, February 21, in Columbus, and elected the following officers: President, Dr. Sherman Leech, vice-presidents, Drs. Theodore G. Davidson and James F. Reynolds; treasurer, Dr. John C. Bishop, and secretary, Dr. Charles W. McGavran, all of Columbus.

Western Slope (Colo.) Medical Society.—The physicians of Garfield, Eagle and Pitkin counties, Colorado, met recently at Glenwood and organized the society, with Dr. Leman G. Clark, Glenwood, president; Dr. Wilmer G. Lockard, Newcastle, vice president; Dr. William W. Crook, Glenwood, treasurer, and Dr. Albert L. Robinson, Glenwood, secretary.

Canadian Medical Association.—The thirty-sixth annual meeting of the association will be held in London, Ont., August 25, 26, 27 and possibly 28, under the presidency of Dr. Walter H. Moorhouse of that city. Dr. Matthew D. Mann, Buffalo, has been asked to deliver the address in gynecology, and Dr. Alexander Hugh Ferguson, Chicago, the address in surgery.

East Jackson County (Mo.) Medical Society.—A local society, made up of the physicians of eastern Jackson County, not including Independence, has been organized at Oak Grove, with the following officers: Dr. Fountain L. Cook, Blue Springs, president; Dr. Elmer E. Peary, Oak Grove, vice president, and Dr. Noah D. Ravenscraft, Buckner, secretary and treasurer.

Genesee County (N. Y.) Medical Association.—At a meeting of this association, February 27, the following officers were elected. President, Dr. Albert P. Jackson, Oakfield; vice president, Dr. Henry E. Gamard, Stafford; secretary and treasurer, Dr. C. Louise Westlake, Le Roy, Fellow to the state association, Dr. William D. Johnson, Batavia, and alternate, Dr. A. F. G. Zuhorst, Oakfield.

Hardin County (Ky.) Medical Society.—The corrected list of the officers elected at the last meeting should read: Dr. Charles Z. Aud, Cecilian, president; Dr. W. H. Shother, Big Spring, vice president, Dr. James C. Mobley, Elizabethtown, secretary and treasurer; board of censors, Drs. James R. Gray, James W. O'Connor and Frank P. Strickler, Elizabethtown, and delegate to the state society, Dr. Charles Z. Aud.

Tri State Medical Society of the Carolinas and Virginia.—The fifth annual session of this society was held in Columbia, S. C., February 25 and 26. The following officers were elected. President, Dr. Davis Furman, Greenville, S. C.; vice-presidents, Drs. John H. Marsh, Fayetteville, N. C., William F. Drewry, Petersburg, Va., and Dr. Edward F. Parker, Charleston, S. C., and secretary, Dr. Rolfe E. Hughes, Laurens, S. C. The next session will be held at Danville, Va.

Carroll County (Ky.) Medical Society.—The physicians of the county met at Carrollton, March 9, and, after an address by Dr. Louis Frank, Louisville, counselor for the district, organized a county society, adopted the constitution and by-laws proposed by the American Medical Association, and elected the following officers: President, Dr. Francis H. Gaines, Carrollton; vice-president, Dr. Percy V. Ellis, Ghent; secretary, Dr. Joseph S. Lehman, Carrollton; treasurer, Dr. J. H. Adcock, Carrollton, and board of censors, Drs. J. P. Wheeler, Prestonville, and W. O. Lindsay and J. Samuel Brown, Ghent.

Associated Health Authorities and Sanitarians of Pennsylvania.—The tenth annual meeting was held in Harrisburg, March 19 and 20. On the evening of March 19 the annual address was delivered by Dr. Lawrence F. Flick, on "The Duty of Boards of Health in the Prevention of Tuberculosis." The relation of boards of health to municipal councils, the working of the law authorizing boards of school directors to enforce sanitary laws of the state, the prevalence of small pox, and the responsibility of boards of health for the prevention of consumption were among the subjects considered.

NORTH BRANCH PHILADELPHIA COUNTY MEDICAL SOCIETY.

Regular Meeting, held Feb. 8, 1903.

The President, Dr. H. Brooker Mills, in the Chair.

Headrest for Removal of Brain.

DR. ADDINELL HEWSON gave "An Exhibit of Dr. B. Stroud's Headrest for Removal of the Brain, Together with Remarks on Such Removal in a Private House." The instrument consisted of a horizontal flat piece of oak and an upright piece in which the head rests and is secured in place by two jaws, which clamps the head just above the mastoid process, thus holding the head absolutely horizontal and firm, the clamps being adjusted by means of thumb screws. With this instrument it is possible to remove the brain and the entire dura from the base of the skull, the dura being very easily removed in the case of a fresh body, while, of course, if the body has been dead for some time, very often the embalming fluids interfere with its removal, those containing zinc particularly having this effect.

DRS. T. TURNER THOMAS and JUDSON DALAND felt that the instrument would be particularly valuable for autopsies in private houses, and for very accurate work in medicolegal cases and where there is cerebrospinal disease.

The Diagnosis and Treatment of Bronchopneumonia.

DR. JUDSON DALAND read this paper and called attention to the fact that the disease has become very prevalent in the past ten years, occurring principally from November to March. There are a variety of causes, such as irritating gases, iron dust, silica and similar irritants, and in many of the constitutional infectious diseases bronchopneumonia is not an uncommon complication or sequela. Bronchopneumonia following influenza is prevalent during the winter, in which there occurs an inflammation of the bronchial tubes and alveoli, which is largely leucocytic, may involve only a few lobules or may involve many lobules in the same region, and not infrequently extends to both lungs. This is one of the peculiarities of bronchopneumonia and is more interesting because it bears on the question of diagnosis. The case may be of the most trifling character in the beginning and yet develop into bronchial pneumonia. The micro-organisms are usually the staphylococcus and streptococcus.

The author felt in the majority of cases the affection began primarily in bronchitis and later the alveoli became affected, mastoiditis also being a not uncommon complication. Thus this swelling of the bronchial tubes interferes with the passage of air through the lungs, and in the course of time produces a considerable area of collapse, which is very difficult to distinguish from bronchopneumonia, and also in association with these other conditions there is frequently spasm of the bronchial tubes. The author also believed that in certain cases of influenza there was an affection of the nerves that have to do with respiration, by which breathing is interfered with without mechanical obstruction. The author felt that, speaking broadly, it was practically impossible to clearly diagnose bronchopneumonia from the symptoms alone, excepting in those cases where the lobules invaded are so numerous that we have a condition analogous to that found in lobar pneumonia. The most important factors, therefore, in the diagnosis are physical examination and an examination of the sputum. In bronchopneumonia following influenza the area of dulness is usually found below the inferior angle of the scapula. The dulness may occur in either or both lungs and may involve the posterior-inferior lobes. In true lobar pneumonia it is impossible to diagnose the affection by the symptomatology or the physical signs, and the inference that it exists may be confirmed by the discovery of diplococci. Reference was made to the frequency with which the signs in this condition shift; an area of dulness being outlined one day, and on the occasion of the next visit the same area would probably be resonant on percussion, but the author felt this should be viewed rather as a corroboration than a doubt of the diagnosis. Attention was directed to the fact that too much stress in diagnosis should not be laid on the presence or absence of bronchial breathing, as frequently owing to the fact that the lungs are not completely aereated,

breath sounds may be either absent or very much diminished, even where there is resonance on percussion. In the treatment of these conditions, absolute cleanliness of the bronchial cavities and naso-pharynx by the use of boric acid solutions was recommended. In order to render the secretions less acid, and also to stimulate the action of the glands the use of one liter of imported vichy, daily, or when it can not be obtained a watery solution of bicarbonate of sodium, one to two teaspoonfuls to the pint of water, was recommended. Iodid of sodium and of strontium were thought to be the best drugs, the former being best employed in the form of a saturated solution, beginning with 2 or 3 drops four times a day and increasing one drop a day until the dose reached five to ten drops four times a day. Most cases are benefited by 20 to 40 drops of the tincture of nux vomica and 1/20 to 1/30 of a grain of nitrate of strychnia at four-hour intervals. In cases where the cough is particularly distressing, 1/24 of a grain of heroin or 1/3 of a grain of codein was recommended. Forced breathing at intervals of four hours was recommended in order to more thoroughly clean out the bronchial tubes of their contents, to secure complete oxygenation and to secure complete inflation of the lungs. Attention was also directed to the importance of absolute rest, stimulation and good food, during the progress of the disease.

DISCUSSION.

DR. JAMES H. MCKEE referred to the difficulty experienced in differentiating between broncho-pneumonias following influenza and some typhoid pneumonias, and reported a case to illustrate. It began with an initiative chill, followed by high fever and a very irregular temperature, and presented all the physical signs of bronchopneumonia. On the 10th day it proved to be typhoid.

The subdivision of the bronchopneumonias, as made by Holt, was thought to be of great value, particularly with reference to the bronchopneumonias in children, as the acute congestive form would often prove fatal in these cases before any consolidation could be detected in the lungs. The speaker felt the symptomatology to be particularly deceiving in cases of bronchopneumonia following influenza, which is usually characterized by great fluctuations in the temperature, pulse and respiration. Among the most valuable physical signs were mentioned tympany and impaired breathing at the base of the lungs. Treatment of a simple character, and directed more to keeping up the vitality of the patient than to the modification of the course of the disease was recommended.

DR. SAMUEL WOLFE felt that more often was it necessary to make a diagnosis from negative than positive signs, and that diminished respiratory sounds at the bases of the lungs should always excite suspicion of this condition. While bronchial breathing was considered an ideal symptom, if present, he felt that it would be found only in rare cases.

In regard to treatment he did not approve of the deep breathing exercises in the cases where inflammation had already set in, believing that better results would be obtained by frequently changing the position of the patient, thus allowing the infected portion of the lung to keep aeration properly and avoid the injurious effects of gravitation. Where the inflammation had not already developed, he felt that these forced breathing exercises might be of value in aborting the pneumonia.

DR. HOWARD S. KINNE felt that forced breathing was inadvisable, as he believed that the lungs should be kept at rest as much as possible when there is acute inflammation. Bronchopneumonia, he stated, occurred more commonly in children, while lobar pneumonia is usually found in adults.

DR. JOHN B. TURNER felt that it was a great mistake to regard the pneumonia as being confined to the lungs entirely, as he believed it was a general disease. The importance of observation for sometime after recovery in order to prevent such sequelæ as phthisis was commented on.

DR. JUDSON DALAND stated that he had never been able to conclusively demonstrate to his own satisfaction bronchopneumonia in the adult. The change of the position of the patient is of value in many instances. Forced breathing,

he thought, would act as a preventive in many instances; and any harm that might result would be more than counter-balanced by the good done to the lung.

La grippe and pneumonia render the individual more susceptible to phthisis, and, in many instances, there is, primarily, a small latent tubercular area, which, under the influence of some such disease as influenza, will become constitutional, thus calling for careful after-treatment. Cotton jackets and poultices seem to be very little used to-day with adults. Moist air is one of the most valuable therapeutic agents in these conditions, and can generally be obtained by keeping the air in the room moist.

In cases where there has been a constitutional disease and pulmonary manifestations, the neurotic element soon arises and becomes prominent. Collapse of the lung following pneumonia was thought to be frequent.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Acne.

Dr. D. W. Montgomery, in *Jour. of Cutaneous Diseases*, states that sulphur is without question our most valuable single agent in the treatment of most cases of acne. He recommends the following combinations:

R. Sulph. precip. 3iiss 6
Spts. etheris 3vi 25
Alcoholis 3iiiss 105

M. Sig.: Apply locally; or:

R. Potassii sulphuret.
Zinci sulph., aa. 3i 4
Aque rosæ 3iv 120

M. Sig.: Apply locally; or:

R. Sulph. precip. gr. xx-xl 120-2165
Vasellini 3i 30

M. Sig.: Apply locally; or:

R. Sulph. precip. gr. xl 2165
Spts. camphoræ 3ss 2
Liquoris calcis 3iv 120

M. Sig.: Apply locally; or:

R. Sulph. precip. 3ii 8
Etheris 3iit 12
Tinct. camph. 3ss 15
Spts. myricæ 3iit 90

M. Sig.: As a local application.

Dr. Sherwell recommends the following locally:

R. Potass. sulphuret.
Zinci sulph., aa 3i 4
Alcoholis
Aq. camphoræ, aa 3i 30
Aq. rosæ 3ii 60

M. Sig.: Apply locally.

Internally he recommends the following on account of its beneficial effect on the pelvic viscera and on lithemic conditions which are commonly present in lithemic individuals:

R. Quinina sulph. gr. xxv 1165
Mag. sulph. 3i 30
Acidi sulph. dil. 3ii 8
Tinct. nucis vom. 3ss 2
Vini colchici
Ext. ergotæ flu, aa 3iii iv 12 15
Glycerini
Aq. destil, aa, q. s. ad 3iv 120

M. Sig.: One dessertspoonful in water in the morning on rising and one-half that amount at bedtime.

F. H. Beadles, in *Indian Med. Record*, states that the cause of the acne must be discovered if possible and treated. Improvement follows the reduction of meats, while a diet of milk, fruit, fish, etc., will improve most cases. The entire surface of the body, except the face, should be sponged with cold water and followed by brisk rubbing with a coarse towel.

He claims that arsenic is both useless and harmful, as well as calcium sulphid. In treating the face after rendering it aseptic, a massaging ball should be rolled freely over the surface and the inconspicuous comedones are brought into view and removed by an extractor. A ring curette may be drawn over the surface of the lesions and their contents extracted.

Bleeding may be encouraged by hot water and the face bathed thoroughly for ten minutes before retiring with tincture of green soap and hot water. It is then wiped dry and the following applied:

R. Zinci sulph.
Potass. sulphuret., aa. 3i 4
Aque rosæ q. s. ad. 3iv 120

M. Sig.: To be applied locally at night.

Tape Worm.

Steinbach, in *Med. World*, recommends the following in the treatment of tape worm:

R. Oleoresinæ aspidii 3iiss 6
Olei ricini 3iv 16
Pulv. acaciæ
Sach. albi, aa 3ii 8
Extracti kamalæ 3iiss 6
Aq. menth. pip. q. s. ad. 3ii 60

M. Sig.: Take in the morning after twenty-four hours' fasting.

Dr. D. R. Brower recommends the following combination:

R. Oleores. aspidii m. xl 2165
Olei terebinthinæ m. xx 130
Spts. chloroformi m. xx 130
Mucil. acaciæ 3ii 8

M. Sig.: At one dose. The patient should be instructed to fast twenty-four hours previous to taking the tennafuge and to take a strong cathartic three or four hours after taking it.

Shoemaker advises the following combination:

R. Oleoresinæ aspidii 3ss 2
Olei peponis expressi 3ss 15
Olei terebinthinæ m. xxx 2

M. Sig.: At one dose, after fasting, to be followed by a purgative.

Acute Coryza.

The treatment of acute coryza or acute nasal catarrh should be considered from a standpoint of prophylactic, general and local treatment, according to Yeo, in *Clin. Therapeutics*. As prophylactic measures a removal or diminution of hypersensitiveness of the skin and mucous membranes. The use of the cold shower bath throughout the year or cold water applied to the head and neck on rising in the morning, thus counteracting the tendency to vascular asthenia.

Residence in a dry climate is certainly advisable. Sea bathing and sea air are of great value, especially in the chronic forms of nasal catarrh.

The author regards diaphoretics as of most benefit. Opium combined with diaphoretics is preferable and will relieve the most distressing symptoms, as follows:

R. Liq. opii sed. m. x-xv 65-1
Vini ipecac. m. v 30
Spts. etheris nitrosi 3i 4
Liq. am. acetat. 3iii 12
Aq. camphoræ q. s. ad. 3iiss 45

M. Ft. haustus. Sig.: To be taken at bedtime.

When opium and morphin are not well borne in small doses even, the following combination is recommended:

R. Spts. etheris nitrosi 3iv 15
Liq. ammon. acet. 3iii 60
Potass. bicarb. gr. xl 265
Vini ipecac. m. xl 265
Aque camphoræ q. s. ad. 3viii 240

M. Ft. mistura. Sig.: One or two tablespoonfuls every four or five hours. For children the foregoing is well adapted, given in doses of two teaspoonfuls. A combination of camphor with small doses of morphin is well borne:

R. Liq. morph. acet. m. xv 1
Spts. camphoræ m. v 65
mucilaginis 3i 4
Aque q. s. ad. 3iiss 45

M. Sig.: To be taken at one dose at bedtime.

Quinin should as a rule be given after the first twenty-four hours and sooner when there is a marked fever and a feeling of depression. It is best given according to the author in an effervescing saline mixture, as follows:

R. Potass. bicarb.		
Sodii bicarb., āā	3i	4
Ammon. carb.	3ss	2
Syr. aurantii	3ss	15
Aquæ q. s. ad.	3viii	240

M.		
R. Quin. sulph.	gr. xii	75
Pulv. acidi citrici	3ii	8
Sacch. lactis	3i	4

M. Ft. chart. No. vi. Sig.: One powder dissolved in water and mixed with one and a half ounces of the mixture and taken three times a day.

When there is much aching and general discomfort in the limbs and other parts of the body the following containing salicin is recommended:

R. Salicin	gr. xv	1
Potass. bicarb.	gr. xx	120
Spts. etheris nit.	3ss	2
Liq. ammon. acet.	3iii	12
Aq. camphoræ q. s. ad.	3iiss	45

M. Sig.: At one dose to be taken at bedtime.

In young children, if the throat is also involved, aconite in small doses gives the best results.

When belladonna is indicated the following combination serves the purpose:

R. Tinct. belladonnæ	m. xl	265
Potassii chloratis	gr. xl	265
Syr. limonis	3iii	12
Aquæ q. s. ad.	3ii	60

M. Ft. mistura. Sig.: Two teaspoonfuls to be taken every hour until relieved.

For local treatment, the following combination is recommended:

R. Liq. am. fortioris	3i	4
Spts. vini rect.	3ii	8
Acidi carbol	3i	4
Aquæ	3ii	8

M. Sig.: Drop this mixture on some absorbent substance and inhale the vapor. The following is also of service in the earliest stage of nasal catarrh:

R. Pinol	3ii	8
Camphoræ	gr. xl	265
Liq. am. fort.	3i	4
Spts. rect.	3i	30

M. Ft. inhalatio.

As a powder to be insufflated the following:

R. Aluminis pulv.		
Sodii boratis, āā	3ss	2
Menthol	gr. 1/3	02
Zinci tannatis		
Bismuthi tannatis, āā	gr. xlv	265
Lycopodii	3ii	8

M. Sig.: To be insufflated into the nares; or:

R. Zinci salicylatis		
Bismuthi tannatis, āā	3i	4
Pulv. boraci	3ss	2
Salol	gr. xx	130
Talci	3ii	8

M. Sig.: As an insufflation into the nares.

Medicolegal.

Who Liable for Medical Attendance on Minor.—The case of Leach vs. Williams, as it is entitled in the Appellate Court of Indiana, Division No. 2, was brought by the latter party against the former, as guardian of a minor, to recover for medical services rendered the minor. The record was silent as to how and for what purpose the party sued was acting as guardian. The evidence also failed to show that the minor had any estate in the hands of the guardian. On the other hand, it showed that the guardian did not have any control or custody of the person of the minor, and did not, in any

manner, contribute to his support. The minor was about 17 years old, and had always made his home with his parents, who furnished him with all the necessities and comforts of life. Moreover, it appeared that the services sued for were procured by the authority of the father of the minor, and that the guardian sued knew 'nothing of it. It was also clear that the services were rendered on the credit of the father, for the account was originally charged to him, and the account rendered to him. Beside, the physician recognized the liability of the father by asking him, when he rendered his bill, to render an account he had against the physician, so that they might have a settlement, which some personal difficulties between them prevented them reaching. Under these circumstances, the physician obtained a judgment against the guardian in the Circuit Court, which is now reversed by the Appellate Court, which declares the evidence wholly insufficient to support the judgment. A father, the Appellate Court says, is chargeable with the care, support and maintenance of his minor child. It has been held that where a minor child lives in the family of a relative, and the father is alive and able to support it, the guardian of the child, in the absence of any contract on his part, can not be made liable for its support. The maintenance and care of a minor child include necessary medical attendance.

Employment of Surgeon to Attend Injured Servant.—In Lithgow Manufacturing Company vs. Samuel, the Court of Appeals of Kentucky affirms a judgment in favor of the latter party, a surgeon, who brought the action to recover for services rendered to one of the company's employes, who had been seriously injured in an accident in its foundry. The issue was made as to whether the surgeon had been employed by any one authorized to represent the company in that matter. The question was submitted to the jury. A number of witnesses was heard, and, the court says, while the evidence was not as clear and conclusive as was desirable, yet it presented about such a state of case as might not unreasonably be expected, under the circumstances attending a sudden and horrible accident, endangering, probably, the life of one to whom the corporation owed certain peculiar duties as master. At such a time it is not expected that parties should stop to negotiate a formal contract. Here there was evidence to the effect that the company's superintendent and general manager authorized the employment of the surgeon, and that, subsequently, with full knowledge of the fact that he had rendered the services to the injured man, and was continuing to do so, and was expected to continue, he ratified that employment. It was true, that was denied by the superintendent on the trial. Under these circumstances, the court holds that it was one of the cases that was peculiarly in the province of the jury to decide. Continuing, the court says that it still adheres to the doctrine that an unauthorized employment of a physician or surgeon to wait on an injured servant can not bind the master for payment of the surgeon's services, although the master may have been aware that the surgeon was rendering the services. In such case, ordinarily, the court says, the master is not bound to employ a surgeon to wait on one in his employment who may be injured while engaged in his work. However, if the cause of the injury is such that the master would be liable to the servant for damages, including medical bills, because of the master's negligence in any particular, and where the master recognizes this liability and does employ medical attention, or ratifies the employment made in his name, with full knowledge of the fact that it has been so made, the court perceives no sound reason why he should not pay for them.

Negligence of Surgeon of Mutual Benefit Hospital.—The California case of Brown vs. La Societe Francaise De Bienfaisance Mutuelle was brought to recover damages alleged to have been suffered by the party suing, while an inmate of the society's hospital, from the negligent and unskilful conduct of its surgeon in setting his fractured leg. The trial resulted in a judgment for \$1,550, which is affirmed by the Supreme Court of California. On the appeal no question was made by the society as to the sufficiency of the evidence to

justify the verdict as to amount, or as to the negligence of the surgeon, but the sole question was as to the liability of the society therefor. The party suing was admitted to the society's hospital for surgical treatment on the terms of paying for the operation, \$50, and for a separate room, if occupied by him, \$3, or, if occupying the general ward, \$2 per day. The operation was performed by the surgeon in chief of the society, who was paid by the month; the amounts received from the party suing going to the society. From this statement, it is said, it was clear that the contract of the party suing was with the society, and that the surgeon was merely its servant or agent. The society, therefore, unless excepted from the general rule of respondent superior (the superior or master must answer), was liable for his negligence. But the contention of the society was that it was a charitable institution, and that, as such, in the absence of allegation or proof of negligence in their selection, it was not liable for the negligence of its servants. In support of the legal proposition thus presented numerous authorities were cited, and, it is said that, though the proposition is not altogether undisputable, either on principle or authority, it might, for the purposes of the decision, be assumed to be correct. As to the remaining question, as to the alleged charitable character of the society, it appeared, from its by-laws, dated May 10, 1854, that it was originally organized as a voluntary association, but was afterwards incorporated by the filing of a certificate of election of trustees June 7, 1854, and on May 5, 1895, new by-laws were adopted. From these it appeared that "the society is established on the basis of mutuality for the treatment of sick members," or, as more specifically provided, for the purpose of securing to its members (without payment otherwise than of dues), medical and surgical treatment, including the services of its physicians, surgeons, apothecaries, dentists, nurses, etc., and also medicines. Nor was there found in it any provision for assistance to others except to paying patients, or sick persons, not members, admitted to treatment for agreed compensation. It was, therefore, it is held, merely an association for mutual profit or benefit, similar in its essential nature to other societies formed for such purposes. Assuming that it was within the powers of the society to adopt the new by-laws, the original by-laws must be regarded as superseded by the latter and, therefore, as immaterial to the question involved, which was as to the present character of the society, though it is stated that the conclusion would be in no way affected were the society still operating under its original by-laws. These, indeed, permitted, and even contemplated, the exercise of charity as one of the aims of the society; but there was nothing in them requiring the application of the funds of the society to such purposes; nor could the funds contributed by the members be regarded otherwise than as, beneficially, their own property. A contention that the surgeon was a sub-agent, appointed by the society as agent of the party suing and, therefore, the agent of the latter, is declared to be without merit.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Philadelphia Medical Journal.

March 7.

- 1 *Tropical Diseases. Charles F. Kieffer.
- 2 *The Ductless Glands as Organs of the First Importance in Vital Functions, and Their Relationship as Such to Disease and Therapeutics. Charles E. de M. Sajous.
- 3 *Gangrenous Destruction of the Pituitary Body, with Disintegration of the Blood, following a Fracture of the Sphenoid Bone and Subsequent Infection. Eugene Wasdin.
- 4 *Surgical Affections of the Biliary Tracts. John B. Deaver.

1. Tropical Diseases.—The points noticed in this lecture by Kieffer are the parasites, *Trichuris trichuria* (*Tricocephalus dispar*), which seems to be very common, though not ordinarily producing serious symptoms; ascariis, which is much more common in the tropics than in the temperate regions, and gives rise to considerable trouble there as here. The main part of his lecture, however, is on the distribution and the symptoms

of uncinariasis, diagnosed by ova in the feces. He cautions against using solvents of thymol after giving this drug, as fatal cases of poisoning have occurred. Alcohol, ether, glycerin and most oils act as solvents and should be avoided. Castor oil is a purgative which should be avoided in these cases and saline purges used instead.

2. Ductless Glands and Their Importance.—This article by Sajous is one which has received considerable attention in the newspapers. He thinks the adrenals have a most important vital function in blood oxidation and that the anterior pituitary body governs their function, they being connected through the sympathetic system. All general symptoms witnessed in disorders in which the blood is invaded by a poison of any kind are, in reality, manifestations of overactivity insufficiency or inactivity of the adrenals. The thyroid gland is also functionally interdependent with the pituitary bodies and adrenals. Together they constitute what he calls the "adrenal system." The organic compound or oxidizing substance which forms in the lungs from loose combination of the internal secretion of the adrenals with oxygen, he calls adrenoxin. A considerable portion of his paper is given up to the discussion of the functions of the leucocytes, which he finds are chiefly active in this oxygenation of the blood, the red corpuscles simply being carriers. The general conclusions as to leucocytes are given in the following:

1. Neutrophile leucocytes form: Peptones, which combine with adrenoxin to sustain general metabolism, i. e. the vital process.
- Myosinogen, which combines with adrenoxin to supply contractile energy to muscles.
- Fibrinogen, which combines with adrenoxin to supply heat energy to the blood.
2. Eosinophile leucocytes form: Hemoglobin, which loosely combines with adrenoxin to insure its storage in erythrocytes.
3. Basophile leucocytes form: Myelin, the active principle of which, lecithin, combines with adrenoxin to develop nervous energy.

He also has a theory as to pancreatic secretion and the action of the posterior pituitary body as the general center of the nervous system governing metabolism. The latter part of his article is given up to the application of these principles to the pathology of certain diseases, fevers, tuberculosis, etc.

3. Gangrene of the Pituitary Body.—Wasdin reports a case in which, after fracture of the inferior maxilla, there were severe general symptoms of jaundice, high temperature, blood disintegration, etc. On autopsy it was found that the trouble was confined largely to the base of the brain, particularly to the contents of the sella turcica, the pituitary body. He was unable to diagnose the condition during life, and discusses it in relation to Dr. Sajous' theories. He says the acceptance of the influence of this hitherto obscure ductless gland, through the cervico-sympathetic system, on the secretion of the more well-known adrenal glands, and of the value of the adrenal secretion in the preservation of the integrity of the blood, readily explains the puzzling facts in this case without the necessity of seeking the source of a sufficiently virulent toxin to have caused them.

4. Surgical Affections of the Biliary Tracts.—Deaver reviews the various surgical disorders of the biliary tracts, calculus, chronic catarrh, etc., of the gall bladder.

Medical Record, New York.

March 7.

- 5 *Radio-praxis. Henry G. Piffard.
- 6 *Feeding in Early Infancy—Home Modification of Milk. Joseph E. Winters.
- 7 *Plastic Artificial Vitreous in Mules' Operation. E. L. Oatman.
- 8 *Clinical Results with Antistreptococcus Serum in Scarlet Fever. Louis Fischer.

5. Radio-Praxis.—Piffard first calls attention to the fact that he, twenty-five years ago, employed sunlight for therapeutic purposes, using the whole spectrum, in other words, simply burning out the lesions. He then notices the history of the Finsen treatment and the Roentgen discovery, and points out the differences between the x-ray and ultra-violet rays and describes the apparatus used, especially for the latter. He is inclined to think that much of the good effects reported of the x-rays on malignant tumors can be just as well, if not better, accomplished by curettage, incision, actual cautery,

caustics, etc. There are many cases where surgeons will hesitate to use the knife, and with these the x-ray apparatus should be tried. The action of blue-violet rays on tuberculosis seems to be a genuine one, according to Piffard's observations. A number of points still needing further elucidation as regards the action of ultra-violet rays on cutaneous disorders are as to whether they are as effective as the x-rays; the tension that is required for generating them; the relative value of a spark from a coil or static machine, etc. In conclusion, he notices, particularly, the effects of radioactive substances, such as pitchblende, which seems to have many of the bad effects of the x-rays, though it is by no means certain that they are exclusively of this character.

6. Infant Feeding.—Winter's article is a lengthy one. He insists on the importance of nursing early in the infant's life, both for the mother and the child, but holds it manifest that the protraction of lactation to eight to ten months is not according to nature. The poorer classes, he thinks, should not be counseled to wean at the end of the second month for economic reasons, owing to the difficulty of securing pure, fresh, sweet milk, but, even with them, nursing should not be extended beyond five to six months. A child born in the spring should be weaned in the autumn, and one born in the autumn should be weaned before the summer. He gives directions as to the preparation of milk as a substitute for mother's milk, and a full series of formulas for each period in the infant's life up to the end of the year, and also the home modification of bottled milk during the summer months.

7. Paraffin in Ophthalmic Operations.—Oatman describes the method of using paraffin employed by him in a case to make a proper stump after Mules' operation. He offers the following as his "immature" conclusions from three cases in his experience:

When fistula follows the Mules' operation it will close spontaneously if a sufficient quantity of the artificial vitreous can be removed. That which remains will form a good support for an artificial eye.

Paraffin used for this purpose is prone to produce fistula by softening and getting between the lips of the wound, or into the track of a suture. These accidents are to be avoided by using paraffin, or some modification thereof, that will not soften at body temperature; also by so suturing the scleral wound that no aperture remains through which paraffin can exude.

A plastic material like paraffin will adapt itself to any inequalities on the surface of the glass shell, and ulceration from pressure is not apt to occur.

Paraffin beads are easily prepared, and may be used in special cases in which glass beads of the required shape or size are not obtainable.

8. Anti-Streptococcic Serum.—Fischer gives the results of his observations of the Baginsky method of treating scarlet fever, reporting two cases. He thinks it is too soon to formulate definite conclusions based on such limited experience, but the clinical results were striking. The effect of the serum on the temperature shows that it did inhibit bacterial products and the disappearance—almost melting away—of necrotic membranes after the fourth day is another striking fact. The swollen glands of the neck also subsided. A vital point consisted in a strengthening diet in addition to strict hygiene.

Medical News, New York.

March 7.

- 9 *Periduodenal Abscess Secondary to Ulcer of the Duodenum. William S. Bainbridge.
- 10 Mosquito Extermination in New York City. George A. Soper.
- 11 Some Practical Suggestions on Mosquito Extermination in New Jersey. Henry C. Weeks.
- 12 The Sanitary Aspect of the Mosquito Question. John B. Smith.
- 13 *The Symptomatology of Tabes: An Analysis of 140 Cases of Locomotor Ataxia. Joseph Collins.

9. Periduodenal Abscess.—Bainbridge reports a case and gives an epitome of the literature of this rather rare condition. He finds that altogether, including the case here reported, twenty-six are on record; twenty-two died undiagnosed; in two operation was performed, and in one a cure was obtained. The duodenum, though a deeply seated and fixed organ, is really in greater danger in its close relationship to the spine and right kidney than some others more superficially placed. He shows from the anatomy of the parts how an ulcer perforating the walls may give rise to simulation of appendicitis by following down the ascending colon. The most frequent

symptoms are vomiting, pain, tenderness and resistance in the epigastric and right hypochondriac regions, constipation or obstipation, and sudden onset or shock. Melena or hematemesis are not common. There is little elevation of temperature unless complications arise, such as peritonitis, pleurisy, cholecystitis, stomach perforation, etc. It occurs most frequently in the male. The following should be specially thought of in connection with this disease, empyema, pleurisy with effusion, cancer of the pylorus, of the liver, pyopneumothorax, hydatid cyst, liver abscess, intestinal obstruction, gall-bladder disease and appendicitis, the latter being the most frequent condition simulated. The diagnosis is always difficult. Leucocytosis may be of some value. If there has been an indication of ulcer, like pain in the stomach two to six hours after eating, tenderness to the right of the twelfth dorsal vertebra, vomiting, especially of blood, and if sudden severe pain with increasing vomiting and collapse appear, operation is imperative.

13. Tabes.—Collins describes the various types, including the neuralgic, the sympathetic nervous type with vesical symptoms, crises, and arthropathies, the type in which optic atrophy develops early, cervical or high tabes, the slow appearing and the rapid appearing type. He is not quite sure whether a cerebral type should be included, not paresis, and is inclined to think that it should be. Illustrations are given of each of these, and an analysis of the initial symptoms in 126 cases. Pain was not so frequent as generally supposed by other observers, though it occurred in about 40 per cent. of the cases, and during the course of the disease in about 90 per cent. Paresthesia is one of the commonest symptoms, nearly as constant as pain, and present in 73 per cent.; girdle sensation in 30 per cent., or 45 per cent. altogether. Tactile sensory disturbances appeared in about 67 per cent.

American Medicine, Philadelphia.

March 7.

- 14 *The Technic of the Operation of Cellotomy as Practiced at the Gynecean Hospital, with the Report of 93 Consecutive Cellotomies without a Death. Henry D. Beyea.
- 15 *The Treatment of Suppurative Inflammation of the Kidneys. Frank Warner.
- 16 *Direct Fixation in Fractures. George W. Guthrie.
- 17 *... sending Aorta Displacing the Heart.
- 18 *... or Psychic Infection. J. W. Wherry.
- 19 *... G. Frank Lydston.
- 20 The Ill Health of Herbert Spencer. George M. Gould.

14. Cellotomy.—Beyea describes in full detail the methods employed by the Gynecean Hospital, Philadelphia, and their results in 94 consecutive unselected cases, including hysteromyomectomy, the various operations on the appendages, pan-hysterectomy, operations for appendicitis, uterine displacements, gastric derangements, tuberculous peritonitis, etc. There was but one death, and that the result of a far advanced sarcoma of the uterine parenchyma involving all tissues to the pelvic bone. In none, regardless of the character of the disease, was there any suppuration of the abdominal incision, or hemorrhage in the tissues or other complication. Intestinal injury was repaired in five cases and recto-abdominal fistula in one. With the one exception all the patients recovered completely.

15. Kidney Suppuration.—Warner gives his experience with kidney suppurations, and holds there are many cases in which a very mild grade of pyelitis exists, curable by the timely administration of urinary antiseptics and by a judicious tonic course. The diagnosis is not always clear, but operative treatment is indicated absolutely only in prolonged cases with emaciation, hectic, etc.

16. Fixation in Fractures.—Guthrie advocates the direct fastening of fractures, and quotes a limited number of cases where it has been successfully employed. He also reports a case of his own observation of fracture of the olecranon treated under the ordinary home conditions in this manner with success. He does not hesitate about treating cases where operation is imperative, in the homes of the patients, using the common-sense means of disinfecting and sterilizing, including the use of rubber gloves, and not always subjecting the patient to the inconveniences and suffering of rushing them off to the hospital in order to get clean surgery.

18. **Communicated Insanity.**—A number of cases are reported by Wherry where one patient has communicated his or her delusion to another, usually brothers and sisters, though there was one case where it was communicated from husband to wife. He calls attention to the peculiar religious character of the delusions in the cases reported, and thinks it is only a few steps from the ordinary beliefs of religious faith to insane delusions in morbidly constituted individuals. He considers that the factor of heredity is, perhaps, overestimated in these cases.

19. **Physical Training.**—Lydston describes the effect of physical over-strain by myocardial degeneration, renal disease, emphysema, aneurism, general myasthenia and hernia. He speaks of the bad effects of a tight belt, restricting the abdominal muscles at a time when all the other muscles are having full play, and the dangers of alcohol and tobacco to athletes. He would taboo competitive athletics as ordinarily understood, though he admits its impracticability.

New York Medical Journal.

March 7.

- 21 *Some Scientific and Practical Aspects of Vaccination. P. H. Bryce.
- 22 *The Present Method of Medical School Inspection in New York. Charles Herrman.
- 23 *Uterine Inertia: Its Causes and Treatment. James Moran.
- 24 *Incomplete Transverse Congenital Occlusion of the Vagina, and a Theory as to Its Origin. Samuel M. Brickner.
- 25 *Expression of the Lid Margin as a Therapeutic Measure in Blepharitis and Its Complications. Percy Fridenberg.
- 26 The Detection of Renal and Vesical Calculi by Means of the X-Rays. Henry P. Mosley.
- 27 A Case of Abnormal Temperature. Lucien Lofton.

21. **Vaccination.**—Bryce holds that the official opinion is crystallized into the following conclusions: 1. Either that official supervision of the products of vaccine establishments by either state or federal officers is imperatively demanded; 2, or that the production in state or federal vaccine establishments of adequate supplies of vaccine of established quality, to be sent out free, or at cost, to municipalities, has become a necessity. He remarks that the capital and competition of large commercial houses supply and maintain a standard of excellence which, perhaps, individual states could not reach, but he thinks that public vaccinators should be appointed, whose experience will lead them to accept only standard reliable vaccine material and prevent the accidents which have injured the credit of this prophylactic measure.

22. **School Inspection.**—Herrman describes the methods at New York. There are eighty school inspectors for the Borough of Manhattan, each with 4,000 to 5,000 scholars to inspect. The class rooms are visited and each pupil examined once a week. Lists of pupils who have been absent on account of sickness are obtained; they are visited, and the character of the disease determined. The pupils are taught to use separate pencils and penholders. Children presenting symptoms of a contagious disease are immediately attended to and are visited by the district medical inspector, who advises when they are ready to return to school.

23. **Uterine Inertia.**—The causes of this condition and the dangers to the mother and child are noticed by Moran, who gives the treatment of the various special conditions. If, from excessive uterine distension, the membranes should be punctured and the excess of water allowed to escape, he does not use ergot, but prefers instruments, considering them a less risk in primary inertia. In primary inertia, from rigidity of the cervix, he usually gives chloral and morphin hypodermically, which tends to relax the os and soothe the patient. In some cases he uses local cocain applications. When the os is well dilated, strychnia sulphate 1/40 to 1/30 of a grain hypodermically, repeated in two hours, if necessary, and a little alcoholic stimulation. In secondary uterine inertia, he advises rest, a few hours of sleep, after which the pains will usually return with sufficient frequency and force to complete labor within a reasonable time.

24. **Transverse Occlusion of the Vagina.**—The following are Brickner's conclusions:

1. Transverse septa of the vagina are rare, occurring in about one in 5,000 cases, about .002 per cent.

2. They are derived from an inclusion by Müller's ducts of cells from the Wolffian duct or ducts after the formation of the genital cord, and are, therefore, epiblastic in origin.

3. Their perforation is proof of the normal conduct of Müller's ducts in all other respects.

4. Transverse septa of the vagina, being normal in adult sheep, whales, dugongs, the manatee, and the chimpanzee, they represent in the human being a reversion, "a return to an ancestral type." Their function is purely speculative, but may have to do with the facilitation of conception; and when they appear in the human female may have a similar purpose, in harmony with other minor defects of development.

5. The treatment of this condition is excision of the septum with suturing of the cut edges. In unmarried women no treatment is necessary. If the septum is first seen early in pregnancy, it may be excised; if during labor, a crucial incision will be sufficient, with subsequent removal of the septum. The prognosis for the child is usually bad unless the septum is incised early or unless it is not too strong to be burst by the advancing head; for the mother, it may result in serious lacerations or fatal hemorrhage.

25. **Blepharitis.**—Fridenberg calls attention to the utility of expression of the lid margins in blepharitis as a method of treatment and prophylaxis, and reports cases. He does not think it has a specific action or urge its use to the exclusion or neglect of other methods, but thinks it is a valuable aid that has been too much neglected.

Boston Medical and Surgical Journal.

March 5.

- 28 *A Research into the Means of Controlling the Blood Pressure. George Crile.
- 29 *On Routine Determination of Arterial Tension in Operating Room and Clinic. Harvey Cushing.
- 30 *Cyto-diagnosis: A Study of the Cellular Elements in Serous Effusions—A Preliminary Report. Percy Musgrave.
- 31 *Intestinal Obstruction Below the Ileocecal Junction. (Concluded.) Thomas H. Manley.
- 32 Symptoms Simulating Appendicitis Caused by an Intra-abdominal Band. James A. Keown.

28. **Blood Pressure.**—Crile considers the conditions of diminished blood pressure, shock and collapse, points out the value of adrenalin in these cases, and summarizes as follows:

In many instances the control of the blood pressure is synonymous with the control of life itself. Surgical shock is an exhaustion of the vaso-motor center. Neither the heart muscle, nor the cardio-inhibitory center, nor the cardio-accelerator center, nor the respiratory center, are other than secondarily involved. Collapse is due to a suspension of the function of the cardiac or of the vaso-motor mechanism. In shock therapeutic doses of strychnin are inert; physiologic doses are dangerous or fatal. If not fatal, increased exhaustion follows. There is no practical distinction to be made between external stimulation of this center, as in injuries and operation, and internal stimulation by vaso-motor stimulants, as by strychnin. Each in sufficient amount produces shock, and each, with equal logic, might be used to treat the shock produced by the other. Stimulants of the vaso-motor center are contraindicated. In shock cardiac stimulants have but a limited range of possible usefulness, and may be injurious. In collapse, stimulants may be useful because the centers are not exhausted.

Saline infusion in shock has a limited range of usefulness. In collapse it may be effective. The blood tolerates but a limited dilution with saline solution. Elimination takes place through the channels of absorption. Its accumulation in the splanchnic area may be sufficient to fix the diaphragm and the movable ribs, causing death by respiratory failure. Saline infusion in shock raises, but can not sustain, the blood pressure.

Adrenalin acts on the heart and blood vessels. It raises the blood pressure in the normal animal; in every degree of shock; when the medulla is cocaineized, and in the decapitated animal. It is rapidly oxidized by the solid tissue and by the blood. Its effects are fleeting; it should be given continuously. By this means the circulation of the decapitated dog was maintained ten and one-half hours. In excessive dosage there is a marked stimulation of the vagal mechanism. Due caution must be exercised.

The pneumatic rubber suit provides an artificial peripheral resistance without injurious side effects, and gives a control over the blood pressure within a range of from 25 to 60 mm. mercury. By the combined use of artificial respiration, rhythmic pressure on the thorax and adrenalin injected into the jugular vein, animals which were apparently dead as long as fifteen minutes were resuscitated.

The suit referred to is made of a double layer of specially constructed rubber and, when inflated, gives a uniform pressure on the surface, producing an artificial peripheral resistance, thus preventing "intravenous hemorrhage" in and exhaustion of the vaso-motor center.

29. **The Routine Determination of Arterial Tension.**—The value of blood-pressure observations, especially in conditions of shock and in operative procedures, is insisted on by Cushing. It is especially when the central nervous system is involved in operations that they are of most value. Also in abdominal surgery there is a great field for them owing to the importance of the splanchnic vascular territory.

30. **Cyto-Diagnosis.**—The technic of cyto-diagnosis in serum is described, the formulae, and the methods in various conditions such as pleurisy are noted in detail. A number of cases is also reported. Musgrave says he can state without

hesitation that the descriptions given by Widal and other observers have been accurate so far as his knowledge is concerned. He thinks the procedure will be found of clinical value after more thorough observation and study.

31. Intestinal Obstruction.—In this concluding lecture Manley describes the operative treatment, formation of an artificial anus, resection with anastomosis, etc. He notices the dangers of various surgical procedures and the importance of early operation where possible. The male subject is notoriously less tolerant of intraperitoneal exposure and manipulation than the female. Resection with anastomosis is the ideal procedure when the condition of the patient and the character of the lesion justify it. The risk of peritoneal contamination and the need of precision of technic are especially emphasized. In the rectum, cancer and luetic strictures most frequently call for surgical relief. The first and safest method is an enterostomy of the sigmoid above the pubis. This side-tracks the fecal current, and relieves urgent symptoms. The second is sacral resection in the male, or vaginal in the female, both of these contemplating the removal of the growth and rectal anastomosis. The last method involves a laparotomy as well as a section from below, and then drawing the third segment of the sigmoid down into the hiatus as a substitute for the displaced rectum, or after the diseased rectum is removed, establishing a left flank anus by the free, open end of the sigmoid. The difficulties of this operation are mentioned. Some of the operations depicted in the illustrations we meet are not only, he says, impracticable on the living, but impossible on the cadaver. The artist is usually innocent of any knowledge of anatomy or pathology.

St. Louis Medical Review.

March 7.

- 33 Report of a Case of Retroflexion of the Gravid Uterus. E. W. Saunders.

Cincinnati Lancet-Clinic.

March 7.

- 34 Materialism vs. Spiritualism. H. V. Sweringen.
35 Tuberculosis—Sanitation. H. H. Splers.
36 Surgery of Prostate, Pancreas, Diaphragm and Spleen—Surgery of Pancreas. (Continued.) B. Merrill Ricketts.

Pennsylvania Medical Journal, Pittsburg.

February.

- 37 Address in Hygiene, Medical Society of the State of Pennsylvania. Edgar M. Green.
38 Address in Surgery. George D. Nutt.
39 *A Case of Gunshot Wounds of the Stomach, Liver, Lung and Head—Operation—Recovery. G. W. Wagoner.
40 The Treatment of Spina Bifida. Wm. V. Laws.
41 The Necessity of Prompt Interference in Strangulated Hernia. Edmund W. Holmes.
42 The Practical Side of Electro-thermic Hemostasis. A. J. Downes.
43 The Roentgen Treatment of Malignant Disease. Charles L. Leonard.
44 *The Treatment of the Insane in Private Practice. F. Savary Pearce.

39. Gunshot Wounds.—Wagoner reports a case in which a man was shot in the chest and head and it was found that the liver, lungs and stomach were involved. The special point of interest was the similarity of the abdominal wound to that of President McKinley, but it was more severe in that the liver and lungs were perforated and excessive hemorrhage occurred. In spite of embarrassment on account of religious prejudice, etc., and the very extensive operation and the incisions required, the patient recovered. Death seems to have been prevented at the critical point, by transfusion with normal salt solution. The stimulating and sustaining effects of the enemas of black coffee are also noted as of interest.

44.—See abstract in THE JOURNAL, xxxix, p. 857.

American Gynecology, New York.

January.

- 45 Report of a Case of Chorioma. H. S. Crossen. Pathologic Report. C. Fisch.
46 *The Surgical Treatment of Pancreatic Cysts, with Report of Two Cases. A. Morgan Cartledge.
47 *Uretero-ureteral Anastomosis. George Ben Johnston.
48 *Movable Right Kidney and Chronic Appendicitis. Walter P. Manton.
49 Presidential Address, Southern Surgical and Gynecological Association. W. E. B. Davis.
50 A Case of Cholecystectomy and Nephropexy. J. Shelton Horsley.
51 Atypical Cases of Ectopic Gestation, Illustrating the Difficulty in Diagnosis. Egbert H. Grandin.

- 52 The Early Diagnosis and Consecutive Treatment of Fibromyomatous Tumors of the Uterus. Leora G. Bowers.
53 A Critical Review of the Discussion on Hysterectomy for Puerperal Sepsis at the Fourth International Congress of Obstetrics and Gynecology in Rome, September, 1902. Hiram N. Vineberg.

46.—Ibid., p. 1338.

47. Uretero-Ureteral Anastomosis.—Johnston reports a case operated on by a modified Van Hook operation with good success.

48. Movable Right Kidney and Appendicitis.—The points emphasized by Manton are: 1. With obscure abdominal conditions, even without discoverable pelvic disorder, a diagnosis should not be attempted until movable kidney and appendicular disease can be excluded by careful abdominal palpation. 2. When nephroptosis and appendicitis are present, operations on the uterus and adnexa alone will not be followed by cure of the patient unless one or both of these conditions have also been removed. The conditions present will govern the question of anchoring the kidney and removal of the appendix together. In movable kidney of the first degree ablation of the appendix alone will generally be all that is necessary. In prolapse of the second degree both operations may be necessary according to the severity of the symptoms, and in the third degree both the appendix and the kidney should receive attention. If the appendicitis is of a mild type and the nephroptosis marked, generally the mere fixing of the kidney to the lumbar wall will, by restoring the circulation in the appendix, cause the latter to resume its normal position or at least will result in a cessation of symptoms.

Annals of Surgery, Philadelphia.

March.

- 54 *Neurofibromatosis of the Nerves of the Tongue (Macroglossia neurofibromatosa) and of Certain Other Nerves of the Head and Neck. Francis C. Abbott and Samuel G. Shattock.
55 *Report of Sixty Cases of Actinomycosis. R. von Baracz.
56 Extradural Hemorrhage from Rupture of the Middle Meningeal Artery. John H. Jopson.
57 New Instruments for the Treatment of Esophageal Stricture. Theodore Dunham.
58 Knife-Blade Removed from Lung. James F. Baldwin.
59 *Acute Yellow Atrophy of the Liver as a Sequela to Appendectomy. Max Ballin.
60 *Primary Retroperitoneal Solid Tumors. Richard Douglas.
61 *Closure by Suture of Intestinal Perforations Complicating Typhoid Fever. F. Tilden Brown.
62 *Note on the Frequent Great Disparity between Falls upon the Buttocks and the Subsequent Persistent Pain and Irremediable Helplessness in Persons in Advanced Years. Oscar H. Allis.
63 Hygroma and Fibroma of the Tuber Ischii Bursae. Emanuel Friend.
64 Blank-Cartridge Wound Infected with Tetanus Bacilli; Prompt Excision; No Tetanus. John B. Bain.
65 *Dislocation of Individual Carpal Bones, with Report of a Case of Luxation of the Scaphoid and Semilunar. William Hessler.
66 *The Treatment of Infantile Spastic Paralysis. Robert Jones.

54. Macroglossia Neurofibromatosa.—The case reported by Abbott and Shattock, though put under the head of macroglossia in which it clinically falls, has nothing in common with the ordinary lymph or hemangiomatous form of the disease, and requires differentiation by such title as here given. The case is carefully reported and the literature briefly discussed.

55. Actinomycosis.—Von Baracz finds that actinomycosis is produced solely by the *Streptothrix actinomycotica*. He discredits the theory that the disease enters through decayed teeth. They favor the occurrence, however, by making softened and swollen gums an easy entrance. The fungus rarely develops in the mucous membrane of the mouth itself; it wanders toward the surface of the body, and develops either in the region of the angle of the lower jaw or lower in the neck. The bones are never primarily affected in actinomycosis of the jaws. The central bone forms of Poncet do not exist. His first cases were treated by operation, consisting of curettage and extraction of teeth. By hypodermic injections of irritants like tincture of iodine, and 20 per cent. solution of silver nitrate, he was able to produce a connective tissue wall around the softening area, and in this manner he was able to cure his last 9 cases without any operative interference. When it attacks the thorax or the lungs the prognosis is unfavorable. In abdominal actinomycosis the fungus always enters the body

through the mucous membrane of the alimentary tract with vegetable bodies, which usually lodge in the region of the cecum or appendix. In these cases the prognosis is good only if the disease is limited; if, however, the prevertebral tissue, liver or the portal veins become involved, it is very bad. Von Baracz considers that only one form of fungus produces this condition. It is easily diagnosed microscopically and may be even possible to diagnose macroscopically with some degree of certainty.

59. Acute Yellow Atrophy of the Liver.—Ballin reports a case with favorable outcome and rather favors the theory that the disease is due to the action of chloroform rather than infection, though he points out that in all cases there was an inflammatory condition pre-existing. As a prophylactic he would advise against the prolonged use of chloroform whenever alcohol or some long chronic ailment has caused catarrh of the liver ducts, especially when we have to do with inflammatory visceral conditions. The narcosis may be begun with chloroform, but ether should soon be substituted. In the case of malignant jaundice, the chances are unfavorable. Success in his case he attributes to venesection and subsequent intravenous saline infusion.

60. Primary Retroperitoneal Solid Tumors.—The tumor in the case reported by Douglas was a lipomyxoma with a round-celled sarcomatous base, weighing fourteen and one-half pounds. The varieties, etiology, pathology, etc., are discussed. He remarks that the prognosis in the innocent forms is ultimately as grave as in sarcoma, the disturbances from pressure finally bringing about death from marasmus, and the change to malignancy should be considered. Operative results have been in some cases successful as in the one here reported. The contra-indications are pronounced cachexia, metastasis, and manifest universal attachments. After opening the abdomen the condition may be found inoperable. The dangers present, especially in removal of these encapsulated tumors, are hemorrhage and necrosis of the intestine or parietal peritoneum. If the intestinal circulation is impaired, resection of the gut may be required. Drainage must be provided, and is usually best obtained through the loins.

61. Typhoid Perforation.—In the one of the three cases here reported by Brown that recovered there was a faint omental agglutination occluding a very recent perforation, and this suggests to him the possibility of intestinal immobilization as advocated by Ochsner, rigorously observed, bringing about a natural instead of a surgical closure of the lesion. He does not wish, however, to be understood as opposing surgical measures, but where it is delayed or absolutely refused, the necessity of using every possible recourse to aid nature.

62. Hip Injuries in the Aged.—Allis calls attention to severe symptoms occasionally occurring from very slight falls on the buttocks. He notices the several theories to account for them, such as, 1, osteophytes springing up about the injured joints. He found this condition in one of his patients. 2. Concussion of the joint. 3. The sciatic nerve may be injured. He has no facts, however, to support this last theory nor another one as to tearing of the ligamentum teres. If the pain persists after one or two months, operation may be advisable and is warranted provided the age and strength of the patient permits.

65. Carpal Dislocation.—Hessert calls attention to the probably more frequent occurrence of these injuries than has been generally considered, and gives an analysis of the reported cases.

66. Treatment of Infantile Spastic Paralysis.—This gives in substance the same general ideas as the article abstracted by us in THE JOURNAL of March 7, p. 677, from the *Lancet*.

American Journal of the Medical Sciences, Philadelphia. March.

- 67 *Metastatic Carcinoma of the Choroid, with Report of a Case and Review of the Literature. E. L. Oatman.
- 68 A Report of Cases of Anemia, with Observations upon Their Symptoms and Morphology of the Blood. J. Alison Scott.
- 69 *A Case of Banti's Disease, with Diffuse Productive Nephritis. Cyrus W. Field.

- 70 *Articular Rheumatism and Some Allied Conditions. Alfred Stengel.
- 71 Two Cases of Complete Bilateral Duplication of the Ureters. A. H. Gould.
- 72 Aphasia in Acute Disease, with Report of a Case Complicating Smallpox. Charles J. Aldrich.
- 73 *The Clinical Value of Blood Pressure Determinations as a Guide to Stimulation in Sick Children. Henry W. Cook.
- 74 *Malarial Fever in Texas: The Financial Loss Arising from the Disease, and Its Prevention. Albert Woldert.
- 75 *Upon the Association of Epilepsy and Heart Disease. T. L. Chadbourne.
- 76 *Hydatiform Mole: With a Report of Two Cases and Clinical Deductions from 210 Reported Cases. Palmer Findley.
- 77 *Entrance of Air into the Veins—A Reply to Dr. Hare. Malcolm Goodridge.

67. Carcinoma of the Choroid.—After a carefully reported case, Oatman discusses the general appearances of this condition, briefly reviewing the principal cases on record. He finds that the literature yields thirty cases which may be considered genuine. It usually occurs early in middle life. The primary growths are mainly in the breast, though other organs may be primarily involved. This excessive incidence of breast cancer is the cause of the greater number of females affected with choroidal carcinoma. The theory that the left eye is the most frequently invaded is not supported by his statistics, and both eyes have been involved in one-third of the cases. The deposit always occurs posteriorly, near the point where a short ciliary artery enters the globe, and appears in the corresponding region of the second eye when the latter is attacked, indicating that the second eye is not invaded by way of the lymph channels of the optic nerve and chiasm. The typical shape is a flat discoid thickening of the choroid with a central elevation, sloping off to the periphery. The eye symptoms rapidly progress until the destruction of vision in two to eight weeks due to the early and extensive retinal detachment. The tension is increased in about one-third of the cases and diminished or normal in over two-thirds. The average duration of life after eye symptoms appear is six and one-half months. He gives in parallel columns the distinctive points between sarcoma and carcinoma. The condition is hopeless. He does not advise operative interference as it may hasten the death.

69. Banti's Disease.—Field's article describes a case and discusses the condition, ending with the following conclusions:

1. There are four conditions, more or less closely related, which may be distinguished as follows: Enlargement of the spleen with anemia and the later development of a cirrhotic process in the liver may be separated from cirrhosis of the liver, with secondary enlargement of the spleen, by the fact that in the latter condition the spleen never attains the size that it does in the former. Both these conditions may be separated from splenic anemia and primary splenomegaly by the presence of the cirrhosis of the liver, while these two latter conditions may only be differentiated from one another after a microscopic examination of the spleen.

2. The case here reported should be placed among those cases termed "Banti's disease" for three reasons: (a) The very great enlargement of the spleen; (b) the presence of a cirrhotic process in the liver; (c) the fact that the enlargement of the spleen was due to a general hyperplasia, but more especially of the connective tissue.

3. The present case, exhibiting an advanced chronic productive nephritis, somewhat extends the scope of the pathologic anatomy of Banti's disease. Speculation as to the etiology of the disease seems at present premature, but the increasing recognition of the occurrence of transitional cases connecting together Banti's disease, splenic anemia, and diffuse cirrhosis of the liver suggests an origin from a common cause emanating from the gastrointestinal tract.

70. Rheumatism.—Three cases of mild acute rheumatism, one of subacute, one of neuritic affection of the peripheral nerves, together with one of rheumatic arthritis are described by Stengel. He considers the latter disease partly nervous and partly rheumatic. He thinks the history of the cases of this condition indicates deterioration of the nerve force and loss of vitality and is entirely compatible with the theory of primary changes in the nervous system as constituting its pathology. The microbic theory of rheumatism is thought by him not worth serious consideration.

73. Blood Pressure Determination.—Cook gives the results of blood pressure determination in sick children and calls attention to the importance of this method as an indication for stimulant treatment. There is no reason, he thinks, why a blood pressure chart should not be kept as well as one for the temperature or pulse where a trained nurse is employed. He does not make it take the place of other signs and symptoms, but simply insists that the accurate estimation of arterial tension furnishes additional aid to stimulant therapy.

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- 104 *How Not to Be Nervous. Hugh T. Patrick.
105 What the State and the Municipality Can Do to Create an Environment Favorable to Health. M. V. Ball.
106 Hyperostosis Cranii (Cephalomegaly). F. Savary Pearce.
107 The Resuscitation of the Newly-Born. Henry T. Duffield.
108 Remarks on the Treatment of Parasitic Diseases of the Skin. W. V. Loftus.

104.—See abstract in THE JOURNAL, xxxix, p. 1066.

Canadian Practitioner and Review, Toronto.

February.

- 109 *Rudolph Virchow—An Appreciation. Charles A. L. Reed.
110 The Treatment of Septic Abortion. K. C. McIlwraith.
111 Placenta Previa. Howard D. Livingstone.
112 Mirror Writing. Robert D. Rudolf.
113 Case in Practice. (Swallowed Coin.) S. McCallum.
114 Glimpses from the History of Medicine. H. S. Hutchison.
115 Herpes Gestationis. Helen MacMurchy.

109.—This article appeared elsewhere. See THE JOURNAL of February 28, title 30, p. 606.

Medical Age, Detroit, Mich.

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- 116 Tendon Grafting. Daniel La Ferté.
117 The Treatment of Chronic Diarrhea. Charles D. Aaron.
118 The Present Status of Mercurial Medication in Syphilis. Henry B. Hollen.

Quarterly Journal of Inebriety, Hartford.

January.

- 119 Patent and Proprietary Medicines as the Cause of the Alcohol and Opium Habit or Other Forms of Narcomania, with Some Suggestions as to How the Evil May be Remedied. Lewis D. Mason.
120 General Principles of Treatment. T. D. Crothers.
121 Note on the Higher Use of Hypnotism and Suggestion, with Special Reference to the Treatment of Inebriety. R. Os-good Mason.
122 Restraint and Moral Measures in the Treatment of Inebriety. S. B. Elliott.
123 The Treatment of Drug Addiction. J. H. Kellogg.
124 Alcoholism; Its Control and Cure in Sanatoriums. George H. McMichael.
125 Is Modern Pharmacy Inimical to Moral Health? N. Roe Bradner.
126 The Effect of Alcohol upon the Nervous System, the Mind and Heredity. Albert E. Sterne.
127 What is the Cause of the Increased Number of Suicides, Homocides, and Murders? N. S. Davis.

Pediatrics, New York.

February.

- 128 Congenital Nystagmus (Hereditary). Wm. J. Greanellé.
129 Lumbar Puncture and Its Value, Especially in Cases of Meningitis. W. B. Warrington.
130 *The Treatment of Infantile Spastic Paralysis. Robert Jones.
130.—See also title 66 above.

St. Paul Medical Journal.

March.

- 131 Fractures in or Near the Joints. Arthur J. Gillette.
132 Head Injuries in Reference to Intracranial Tension. Frederic S. Dennis.
133 Gastric Ulcer: Etiology, Symptomatology and Diagnosis. M. C. Millet.
134 Fracture of the Long Bones. G. R. Curran.
135 Rural Water Supplies in Minnesota. H. C. Carel.
136 Anencephalus—Spina Bifida. Owen W. Parker.

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Medical Fortnightly, St. Louis.

February 25.

- 104 *How Not to Be Nervous. Hugh T. Patrick.
105 What the State and the Municipality Can Do to Create an Environment Favorable to Health. M. V. Ball.
106 Hyperostosis Cranii (Cephalonmegaly). F. Savary Pearce.
107 The Resuscitation of the Newly-Born. Henry T. Duffield.
108 Remarks on the Treatment of Parasitic Diseases of the Skin. W. V. Loftus.

104.—See abstract in THE JOURNAL, xxxix, p. 1066.

Canadian Practitioner and Review, Toronto.

February.

- 109 *Rudolph Virchow—An Appreciation. Charles A. L. Reed.
110 The Treatment of Septic Abortion. K. C. McIlwraith.
111 Placenta Previa. Howard D. Livingstone.
112 Mirror Writing. Robert D. Rudolf.
113 Case in Practice. (Swallowed Coin). S. McCallum.
114 Glimpses from the History of Medicine. H. S. Hutchison.
115 Herpes Gestationis. Helen MacMurchy.

109.—This article appeared elsewhere. See THE JOURNAL of February 28, title 30, p. 606.

Medical Age, Detroit, Mich.

February 25.

- 116 Tendon Grafting. Daniel L. Ferté.
117 The Treatment of Chronic Diarrhea. Charles D. Aaron.
118 The Present Status of Mercurial Medication in Syphilis. Henry B. Hollen.

Quarterly Journal of Inebriety, Hartford.

January.

- 119 Patent and Proprietary Medicines as the Cause of the Alcohol and Opium Habit or Other Forms of Narcomania, with Some Suggestions as to How the Evil May be Remedied. Lewis D. Mason.
120 General Principles of Treatment. T. D. Crothers.
121 Note on the Higher Use of Hypnotism and Suggestion, with Special Reference to the Treatment of Inebriety. R. Os-good Mason.
122 Restraint and Moral Measures in the Treatment of Inebriety. S. B. Elliott.
123 The Treatment of Drug Addiction. J. H. Kellogg.
124 Alcoholism; Its Control and Cure in Sanatoriums. George H. McMichael.
125 Is Modern Pharmacy Inimical to Moral Health? N. Roe Bradner.
126 The Effect of Alcohol upon the Nervous System, the Mind and Heredity. Albert E. Sterne.
127 What Is the Cause of the Increased Number of Suicides, Homocides, and Murders? N. S. Davis.

Pediatrics, New York.

February.

- 128 Congenital Nystagmus (Hereditary). Wm. J. Greanellé.
129 Lumbar Puncture and Its Value, Especially in Cases of Meningitis. W. B. Warrington.
130 *The Treatment of Infantile Spastic Paralysis. Robert Jones.

130.—See also title 66 above.

St. Paul Medical Journal.

March.

- 131 Fractures in or Near the Joints. Arthur J. Gillette.
132 Head Injuries in Reference to Intracranial Tension. Frederic S. Dennis.
133 Gastric Ulcer: Etiology, Symptomatology and Diagnosis. M. C. Millet.
134 Fracture of the Long Bones. G. R. Curran.
135 Rural Water Supplies in Minnesota. H. C. Carel.
136 Anencephalus—Spina Bifida. Owen W. Parker.

- 137 Report of a Case of Carcinoma of the Uterus Treated with the X-Rays. Charles R. Ball.

Southern California Practitioner, Los Angeles.
February.

- 138 Louis Pasteur—A Character Study. J. H. Utley.
139 Radical Operative Treatment of Chronic Suppurative Otitis Media. B. F. Church.
140 Treatment of Bright's Disease. John C. King.
141 In Eastern Hospitals. A. S. Parker.
142 Health of Los Angeles. L. M. Powers.
143 An American Oculist in Berlin. A. C. Rogers.

New Orleans Medical and Surgical Journal.
March.

- 144 An Atypical Case of Cancer of the Stomach. Otto Lerch.
Clinical Review, Chicago.
March.

- 145 Floating Kidney—Inguinal Hernia. W. W. Keen.
146 Lecture on Gynecology. Franklin H. Martin.
147 A Surgical Clinic. (Tubercular Hydrops, etc.) N. Senn.
148 Treatment of Rickets. Isaac A. Abt.
149 Glimpses at European Gynecology and Obstetrics. Henry F. Lewis.

Kansas City Medical Record.

February.

- 150 Report of a Case of Interest at the Kansas City Hospital. R. M. Tinney.
151 "She Ate Her Own Hair." G. W. Main.

Medical Sentinel, Portland, Ore.
February.

- 152 The Pathology and Treatment of Major Epilepsy. William House.
153 The Prognosis of Ascending Gonorrhea in Women. L. C. McCalla.
154 Tetanus Traumaticus—A Case Report and Review of Subject. H. A. Castle.
155 Bacteriology from a Humorous Standpoint. J. Hood Owings.
156 The Medical Department of the U. S. Army. R. G. Ebert.

Journal of Medicine and Science, Portland, Me.
February.

- 157 Some Common Diseases of the Scalp and Face. G. A. Pudor.
158 Suprapubic Lithotomy. C. E. Williams.
159 Vaginal and Rectal Operations. S. C. Gordon.
160 The Druggist and the Prohibitory Law. C. B. Sylvester.
161 Report of Cases Treated at the Maine Eye and Ear Infirmary. E. E. Brown.

The Canada Lancet, Toronto.
March.

- 162 Expert Medical Testimony. Joseph E. McDougall.
163 Some Further Results in the Treatment of Pulmonary Tuberculosis. J. H. Elliott.
164 Vomiting of Pregnancy. John Hunter.
165 The Action of X-Rays on Diseased Structures. A. Groves.
166 A Résumé of the Recent Pathology of Insanity. F. E. Lawlor.
167 Some Indications for Treatment in the Mentally Diseased. J. A. Mackenzie.

Texas Medical News, Austin.
February.

- 168 Pneumonia and Its Treatment. A. G. Krueger.
169 Catarrhal Pneumonia. C. S. Lane.
170 Treatment of Pneumonia. J. L. Short.
171 Diphtheria. W. R. Hazlewood.

Colorado Medical Journal, Denver.
December, 1902.

- 172 The Scientific Aspect of Modern Medicine. Frederick S. Lee.
173 Address, Colorado School of Medicine. Luman M. Giffin.
173½ Chronic Gastric Catarrh. A. E. Engzellus.

Medical Bulletin, Philadelphia.
February.

- 174 A Case of Tubercular Leprosy, with Lepra Bacilli in the Circulating Blood. John V. Shoemaker.
175 The Lepra Bacillus in the Circulating Blood. L. Napoleon Boston.
176 Some Notes on the Bacillus Lepræ. Joseph McFarland.
177 Observations upon Leprosy Occurring in Japan, Iceland and Norway. Judson Daland.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Presse Medicale, Paris.

- 1 (No. 7.) L'enseignement (instruction) dermatologique à Paris. L. Brocq. Thirteen portraits.
2 *Recherches nouvelles sur la "sécrétine." Action sur le foie. E. Henriques and L. Hailion.
3 Traitement de l'iritis. R. Romme.
4 (No. 8.) Nosologie générale des atrophies musculaires progressives. P. Raymond.
5 Importance de la lecitine dans les fonctions de la capsule surrénale et sa sécrétion par cet organe. L. Bernard, Bigart and H. Labbé.
6 (No. 9.) Les origines de l'histologie. P. E. Launois.

- 7 *L'éphidrose dans la paralysie générale. E. M. de Montyel.
8 (No. 10.) *Sections multiples des nerfs crâniens. Debove.
9 La phlébologie chez les convalescents de phlébite, les variqueux et les névropathes. H. Hannequin.
10 *La myorrhaphie des levatores ani dans le traitement du prolapsus du rectum. C. Lenormant.
11 L'alcool en thérapeutique. A. Martinet.
12 (No. 11.) The Old Hospital at Tonnerre, Dating from 1293. H. Chaput. Un hôpital d'autrefois. Illustrated.
13 Le vulgaire tube à drainage pour fixer les sondes à demeure (permanent catheters), boucher les anus contre nature (plug artificial anus) et servir de canule à trachéotomie. P. Stolanoff.
14 (No. 12.) L'argent colloïdal (collargol) et ses indications thérapeutiques. Netter and Salomon. See THE JOURNAL of March 7, p. 679.
15 Les injections de bifodure de mercure en solution aqueuse dans le traitement de la syphilis. E. Emery and M. Druelle.
16 (No. 13.) De certaines arythmies cardiaques en rapport avec (in relation to) les données nouvelles (new data) en physiologie. H. Vaquez.
17 Du traitement chirurgical de l'ethmoïdite purulente. J. Guisez.
18 La radiographie stéréoscopique des calculs urinaires. A. Béclère.
19 (No. 14.) *Diagnostic de la valeur fonctionnelle des reins au point de vue chirurgical. Tuffier and Mauté.
20 *Un nouveau syndrome bulbaire. P. Bonnier.
21 *Mobilisation des deux bouts de l'urètre (of two ends of urethra) pour remédier à une perte de substance (loss of substance) de ce conduit. M. Savariaud.

2. Action of Secretine on Liver.—Secretine is the fluid obtained by acid maceration of the mucosa of the duodenum of a fasting mammal. It exerts a remarkable influence on the secretion of pancreatic juice when injected into other animals. The present article combats the notion that this action is specific for the pancreatic juice, as the writers' experiences demonstrated that it had a similar and possibly even more pronounced action on the secretion of bile.

7. Hyperidrosis in General Paralysis.—The particulars of 54 cases of general paralysis are given, followed from the incipency of the affection to death. Hyperidrosis was marked in one out of every 9 male patients. It was never observed in syphilitics or hard drinkers and never after the age of 50. It was twice as frequent in winter as in summer, and was never noted in spring or fall. It was always excessive from the start and ceased with equal suddenness, lasting two months on an average, occasionally five. It was always noticed in the second stage of the affection, but there did not seem to be any relation between it and the other symptoms. It recurred later in one instance, but was limited to the brow.

8. Results of Multiple Sections of Cranial Nerves.—On account of a malignant tumor in the neck, the pneumogastric, hypoglossal and sympathetic nerves were cut in the case described. The patient has hemiparalysis and hemiatrophy of the tongue as the result of section of the hypoglossal. Section of the sympathetic has induced slight atrophy of that side of the face, but there is no paralysis. The eyeball is more sunken than normal, probably from paralysis of the tract of fibers in the capsule of Tenon, innervated from the sympathetic. Protrusion of the eyeball is probably due to some permanent irritation of these fibers, while section of the sympathetic induces the opposite effect. The palpebral fissure is wider than normal, and myosis is also marked owing to the lack of the antagonist action of the fibers innervated by the sympathetic. Section of the pneumogastric has caused paralysis of the vocal cord on that side, but no other symptom. The extirpation of the neoplasm required ligation of the carotid which did not cause any disturbance at the time, but complete hemiplegia gradually developed after twenty-four hours on the opposite side, with aphasia, and then gradually subsided to merely traces. Five months later an epileptiform seizure occurred, leaving transient hemiplegia. There were no antecedents of hysteria or epilepsy, and the seizure was evidently a tardy consequence of the ligation applied to the carotid.

10. Myorrhaphy of Levatores Ani for Prolapse of Rectum.—This procedure has been applied as a means of correcting prolapse of the uterus but the two cases reported are the first published in which prolapse of the rectum was treated in this way. A Russian surgeon suggested the method at the Moscow Congress but had practiced only on the cadaver. The first patient was a woman of 40, and the second a man of 65. The prolapse has not recurred in either. The muscles were exposed to the peritoneum, isolated and sutured together by the

inner surfaces or edges. In the female the intervention accomplishes both a myorrhaphy and vaginopexy at the same time.

19 **Functional Tests of the Kidneys.**—Tulzer remarks that the freezing point, methylene blue, phloridzin and other functional tests of the kidney afford insight into the conditions of only a portion of the total urine for twenty-four hours, while it has always been considered extremely important to base all calculations on the total output. He has been studying the conditions in one of his patients who voided all the urine from one kidney through a lumbar fistula while that from the sound kidney was voided naturally through the bladder. He gives the details which establish beyond question that in this case at least, the proportions between the functional conditions of the two kidneys is determined by all the functional tests known, remained approximately the same at all times. Each kidney performed its share of the urinary task in the same proportion for each half hour as during the entire twenty-four hours. One kidney was affected with hydronephrosis, with slight sclerosis, while the other was sound, and the diseased organ did only half the work of the other. Study of this case confirms the value of the information to be derived from segregation of the urine from each kidney, even for brief, half-hour periods.

20 **A New Bulbar Syndrome.**—Bonnier shows how injury of the large bulbar nucleus, which he calls the nucleus of Deiters, may entail a syndrome distinguished by vertigo, with partial or complete loss of ability to stand, reflex oculomotor disturbances, a condition of nausea and distress, transient auditory phenomena and pains in certain regions of the trigeminal domain. The nucleus is large and may not be affected through out its entire extent, consequently the complete syndrome is rarer than the partial. He compares these bulbo protuberantia centers to the small keyboard of an organ. A slight touch to one of its keys sends vast waves of sound sweeping through its periphery, reverberating farther and farther. The symptomatology harmonizes into a coherent and progressive harmony which we can trace back to the bulbar notes played. The syndrome under discussion associates cerebellar phenomena with the reactions peculiar to the third, fourth, fifth, sixth, eighth, ninth and tenth cranial nerves, but the nucleus involved is pre dominantly a center for the labyrinth. In 97 out of 100 cases of tabes examined by Collet this nucleus was found affected.

21 **Mobilization of Urethra to Remedy Loss of Sub stance.**—Savariaud has followed the method of mobilization of the two stumps of the urethra suggested by Carl Beck and von Hacker, to unite them after extensive injury or resection of the canal. He describes a case in which he performed this operation with satisfactory results on a boy of 8. The conditions are more favorable for success in a traumatic case than in hypospadias for which the method was originally suggested, owing to the tendency to curvature and to the rudimentary condition of the urethra in the latter.

Revue de Chirurgie, Paris.

22 (XXIII, 2) Note sur 2 cas de kystes mucoïdes du cou (of the neck) à épithélium cilié dérivés des kystes du tractus thyro-glosse. P. Fredet and M. Chevassu.

23 *Pharyngotomie pour ablation des tumeurs de la portion buccale du pharynx. L. V. Oilow.

24 *Un cas d'anastomose artérielle veineuse longitudinale pour artère oblitérante. Gallois and Pinatelle (Jaboulay's clinic).

23 **Pharyngotomy.**—Orlow points out that tumors developing in the upper, middle or lower portion of the pharynx require entirely different surgical intervention. About a dozen separate methods of treating those in the middle or buccal portion have been devised, but Oilow prefers his modification of Kronlein's method. The semicircular incision instead of starting at the juncture of the lips, commences at the middle of the lower lip, thus averting all danger of injury of the facial nerve. Among the advantages offered by this method is the wide opening up of the field of operation, allowing free access to the tumor and complete oversight of the upper end of the larynx, while it enables the ganglia in the region and extending down into the neck to be readily extirpated. Section of the lower jaw is indispensable in all these operations. A still further advantage is the lesser disfigurement that results from the

semicircular incision in the shadow of the jaw, visible only as a symmetrical line on the chin. For benign growths free from glandular involvement, the Trendelenburg method is preferable, but for malignant tumors the method above described is superior to all others, he believes. In 8 of the 10 cases described the patients were in the horizontal decubitus. In case of extensive malignant growths preliminary ligation of the external carotid is required, and in particularly serious cases, also of the internal carotid. One of his patients succumbed to hemorrhage from the external carotid the eleventh day, from an erosion induced by infection of the wound. The other patients bore the operation well, and there were no evidences of broncho pneumonia afterward. The age of the patients ranged from 36 to 62 years. The tumor was an endothelioma in 2 cases, in one of them shaped like an hour glass; carcinoma in 3 and sarcoma in 4. It is impossible to maintain asepsis in this region, and the union of the jaw was not always regular. There have been recurrences in 3 and a suspicion of them in 2, but not in the cases of endothelioma. In 1 case the ultimate outcome is unknown. All the patients were in an advanced stage of the affection, the results will be better when intervention can be undertaken during an earlier phase.

24 **Arterio Venous Anastomosis.**—This article describes the post mortem findings in the case of arteritis obliterans mentioned in THE JOURNAL of February 7, p. 408. The first manifestations are sharp pains in the legs, exceptionally also in the arms, occurring in an adult free from syphilis or other infectious disease. The pain is mostly continuous with exacerbations. Then gangrene develops, limited at first to the toes it gradually encroaches on the leg with a slow and progressive course, usually without effusion. The arterial pulse vanishes far in advance of the gangrene. It is frequently almost impossible to find the arteries as there is no pulse, and they can not be palpated as hard cords as in arteriosclerosis. The arteries elsewhere are small and the pulse is weaker than normal. The leg was amputated at the thigh in the case described. The obliterating lesion consists in a thickening of the inner coat of the arteries, with connective tissue transformation reducing and finally occluding the lumen of the vessel. The process is usually confined to the medium sized arteries, and is sometimes accompanied by endophlebitis, but the nerves have always been found sound. Couchet collected 13 cases with atheroma or endophlebitis in some, but no known dyscrasia, no infection. Twenty-one other cases have been published in the literature. Some of the patients were apparently cured by amputation, but as the cases were not followed the final termination is not known. Jaboulay's is the third operation on record in which an anastomosis was established between an artery and vein. The opening was found still permeable at the autopsy and the union was complete between the tissues of the two vessels. In the first case published the pains of the dry, spontaneous gangrene to the ankle vanished after anastomosis between the artery and vein had been established. But they recurred later and amputation was performed. In the second case the patient was a man of 72 with traumatic gangrene of three toes. The anastomosis was done at the same time as the toes were disarticulated. The gangrene was arrested and the patient recovered. These cases are described in full by the operator, San Martín y Satiusteigui of Madrid in a pamphlet published by E. Teodoro, Madrid, 1902, entitled "Discurso leído en la solemne sesión inaugural en la Real Academia de Medicina, 1902." In all these three cases on man longitudinal anastomosis was established between the femoral artery and vein.

Semaine Médicale, Paris.

25 (XXIII, 4) *Pathogénie peritonitique de la colique hépatique et des crises douloureuses épigastriques. R. Triplel and J. Payot.

26 Letter from America. La diphtérie à Boston et à Philadelphie. F. Munch.

27 (No. 6) *Pseudo Heart Disease. D. Baré—Les faux cardiaques.

28 Letter from America. Le traitement de l'appendicite en Amérique. F. Munch.

29 Traitement des plaies (wounds) infectées par l'acide phénique associé au camphre. V. Chlumsky.

30 Benefit of Lemons in Treatment of Dropsy. N. T. Tchigaleff—Le citron comme antihydrique.

- 31 (No. 7.) Action of Suprarenal Extract. R. Lépine.—Sur l'action de l'extrait de capsules surrénales.
 32 Letter from America. La douleur rénale provoquée dans le diagnostic, etc. F. Munch. (Kelly's method.)
 33 Ibid. Le traitement des tumeurs malignes à New York.

25. Peritonitic Origin of Liver Colic, Etc.—Tripiet's further experience has confirmed more and more the assumption which he has long been proclaiming in regard to appendicitis, that the pain in affections of the abdominal viscera is due solely to inflammatory processes in the surrounding peritoneum. He formulates the law that none of these affections are accompanied by attacks of pain unless the surrounding peritoneum is involved in some acute or subacute inflammatory process, and that the pain is more intense the smaller the quantity of the fluid exudate. The same law applies to all the serous membranes, the pleura, pericardium, etc. Certain pains manifestly due to a flare-up of peritonitis, when it is situated near the liver, may deceptively simulate liver colic. Perigastritis due to a prepyloric ulcer in one case was diagnosed as liver colic without icterus, and the patient took several courses at Vichy until the progressive character of the trouble compelled a laparotomy. In three-fourths of all the cadavers that came to autopsy there were evidences of healed subhepatic peritonitis with adhesions, and the gall-bladder showed signs of old inflammation in the majority of cases, the symptoms of which had generally passed unrecognized during life. Some contained a calculus and others no sign of lithiasis. Instead of the general tendency to incriminate the appendix and to regard other concomitant abdominal lesions as secondary to inflammation at this point, the autopsy findings in Tripiet's researches indicate that the gall-bladder is generally responsible, and that the appendicitis is itself secondary. There can be no question that many cases of mild or subacute inflammation of the gall-bladder are overlooked in the clinic and yet they may be the starting-point for a neighborhood peritonitis and infections in the rest of the abdomen, near or remote, especially in the vicinity of the appendix and organs in the small pelvis, more rarely by contiguity in the pleura and pericardium. Instead of an "appendicular pleurisy," the facts observed in the cadavers examined speak for the reverse, a descending instead of an ascending infection. The adhesions left from these mild inflammations of the peritoneum around the gall-bladder have evidently been mistaken for physiologic anomalies in many cases. When noticed as pathologic no one seems to have thought of comparing them with the pathologic past of the subject. In looking for them the viscera must be examined *in situ* to note the relations and adhesions between them instead of taking them out singly for examination.

27. Pseudo-Heart Disease.—Barié describes four groups of what he calls "false cardiacs." They are usually adults or youths, all either dyspeptics, smokers, neuropaths or victims of incipient tuberculosis. Notwithstanding their palpitations, their pains in the heart region and other symptoms, the heart will be found sound. In the dyspeptics some irritation from the lining of the stomach is transmitted by the sympathetic and induces a reflex excitation of the capillaries of the lung, causing spasmodic contraction. This raises the pressure in the pulmonary artery system; the right heart becomes dilated and tricuspid insufficiency results. Experience has shown that this reflex action occurs exclusively with trivial digestive disturbances and is never observed in serious conditions. The same syndrome may also result from a small calculus in the biliary passages. This pseudo-heart disease is most frequent in neuro-circulators. It is sometimes the initial manifestation of incipient tuberculosis. In this case the palpitations may be accompanied by tachycardia, or the latter may occur alone and may precede by six months or a year any appreciable symptoms on the part of the lungs. The heart symptoms may be due to a dyspeptic condition very common in incipient tuberculosis, or to compression by some glandular involvement or to actual tubercular involvement of the heart. There is also a symptomatic bradycardia observed in incipient tuberculosis, but it is very rare. The diagnosis in these tuberculous cases is difficult as the subject attributes his symptoms to heart disease. An aid in differentiation is the arterial pressure which is almost

invariably low in uncomplicated incipient tuberculosis, and the phosphaturia, which is also common at this stage. Radioscopy may likewise reveal a lesser transparency of the apex of the lung, as well as the deficient excursion of the diaphragm on the side affected. The potassium iodid test proposed by Striker may also prove useful in the differentiation, and serum diagnosis. Barié also describes the attacks of pseudo-angina pectoris, and the pseudo-heart disease noticed at the time of puberty in girls and at the menopause as also in certain affections of the uterus and adnexa, in gout, diabetes, etc.

Centralblatt f. Gynaekologie, Leipsic.

- 34 (No. 6.) Die Drainage nach Laparotomie. A. Sippel.—Advocates rinsing with salt solution and draining.
 35 Abortion by Silver Cauterization of Cervix. Pflering.—Geschlechtliche Bemerkung.
 36 Ruptura cervicis centralis anterior sub abortu. O. Weiss.
 37 Fall von Prolapsus uteri inversi. E. Funke.
 38 Eine Modifikation des Hegar'schen Nadelhalters (needle holder). G. Bueckhard.
 39 (No. 7.) Ein einfacher (simple) Hysterophor und eine Bandage gegen Hängebauch (pendulous belly) und Prolaps. O. Pflering.
 40 *Zur Technik der Füllung des Colpeurynter. A. Kurrer.
 41 Trokarkornzange (combination of trocar and dressing forceps). L. Fraenkel.
 42 Ueber ein modificiertes französisches (French) Dekapitations-Instrument. P. Bong.
 43 (No. 8.) Für die Drainage. M. Hofmeter.
 44 Indiziert eine Uterus-Ruptur den Kaiserschnitt (Caesarean section) bei wieder eintretender Schwangerschaft (by recurring pregnancy)? H. W. Freund.
 45 Zur Kasuistik der Verkalkung (calcification) des Ovariums. J. Milländer.

40. Filling the Colpeurynter.—Kurrer attaches the colpeurynter to a fountain syringe, holding about a quart, hung two yards above the bed. The colpeurynter thus automatically fills itself as allowed by the contractions of the cervix.

Muenchener Med. Wochenschrift, Munich.

- 46 (L. 6.) *Ueber chirurgische Intervention bei Speiseröhrenverengerung (esophageal stricture). H. Lindner.
 47 Centrale Aktinomykose des Unterkiefers (lower jaw). Von Bruns.
 48 Fall von infantiler Pseudobulbarparalyse. F. Kaufmann.
 49 Die Soxhlet'sche Nährzucker (sugar food) in der Ernährungstherapie kranker Säuglinge (in diet treatment of sick infants). O. Rommel.
 50 Die Behandlung der Geburt bei engem Becken (treatment of childbirth with contracted pelvis) in der Privat-Praxis. A. Mueller.
 51 Zur Frage der Häufigkeit (frequency) und Etiologie der Tubar-Gravidität. W. Hahn.
 52 Ueber die Bestimmung der Schmerzempfindlichkeit (sensitivity to pain) der Haut (of skin) mit dem Algesimeter. R. von Hoesslin.
 53 Ueber eine Pipette zur Blutkörperchenzählung (pipette for automatic blood count) mit automatischer Einstellung. R. May (Munich).
 54 *Aseptic Dressings for Immediate Use. G. Perthes.—Gestoffe für die Kriegschir des praktischen Arztes. (Intoxication with carbonic acid gas). K. Wolf.
 56 Ileus infolge (in consequence of) Thrombose der Vena mesenterica. A. Reitzstein.
 57 Atropin-Behandlung eines Falles von Darm-Paralyse mit Ileus-Erscheinungen im Verlaufe einer Meningo-myelitis luetica. A. Homburger.
 58 (No. 7.) Hysterische Tachypnoe bei organischen Herzerkrankungen (heart affections). H. Curschmann. Two traumatic cases.
 59 Neue Plattfusselnagen (flat-foot insole) aus Celluloid-Stahldraht (wire). F. Lange.
 60 Fall von Bläserlahmung (wind instrument paralysis). E. Stadler.
 61 Ueber eine Conjunctivitis-Schul-Epidemie nebst einigen allgemeinen Bemerkungen über ärztliche Anordnungen (medical instructions) bei Schul- (school) Epidemien. H. Zia.
 62 Zur Aetiologie des Schulterblattthochstandes (elevation of scapula). O. Bender.
 63 Zur Kasuistik der familiären amaurotischen Idiotie. C. Gessner.
 64 Fall von traumatischer Hysterie unter psychischer Behandlung rasch in Heilung übergehend. R. Treugott.
 65 Tritt Placenta previa auch ohne Blutung auf (without hemorrhage)? Burger.
 66 *Die streikenden Geraer Kassen-Aerzte und der Vorstand des Leipziger wirtschaftlichen Verbandes (the Battle of the Clubs at Gera). Hartmann.

46. Surgical Treatment of Stricture of the Esophagus.—Lindner's experience has been no better with carcinomatous stricture than that of others. About 18 cases have been published; the patients died shortly after the operation in 5, but the remainder survived for a longer or shorter time, none for more than two years. He has operated on 3 but none survived more than a few days. He has used Frank's method of making a gastric fistula in 15 cases of benign stenosis of the esophagus

and the results for the first two or three months were ideal, but after this the fistula became incontinent and the patients wasted away. He has now abandoned it altogether. He has been very successful with von Hacker's method of "endless sounding," and has found that very few cases prove rebellious to it. In one recently, a boy of 7, the multiple strictures caused by drinking lye, proved impermeable to the sounds, and as a last resort the esophagus was exposed its entire length in the neck, and from this point the sound was finally successfully passed into the stomach and the strictures dilated. The stomach fistula healed in a week, and a week later the sound could be introduced from the mouth. The wound in the neck was simply coapted with plaster. The lad was trained to keep up this endless sounding to prevent the stricture from closing up again. He soon learned to introduce the sound himself and was dismissed in good condition.

54. **Always Ready Aseptic Dressing for Wounds.**—The dressings are rolled up separately in an aseptic cover. Two strips of parchment are placed in such a way that by pulling on the parchment the dressings can be opened and spread out ready for application, without being touched by the hand. The cut shows how this is accomplished.

66. **The Strike at Gera.**—This article is by the president of the Union for the Protection of the Economic Interests of the Physicians of Germany, which has been sustaining the physicians at Gera in their resignation of their positions as medical officers to the great textile industries sick benefit company. He reviews the history of the battle of the clubs in Germany and extols the action of the Gera physicians as a brilliant example for the entire profession by their united stand for ethical principles and their brave perseverance in the course once decided on. He remarks that it is the first time in Germany that physicians have taken such a decided step as to refuse to attend the policy holders in the company, even as private patients. The responsibility for the conditions rests with the officers of the company and with the local authorities which have a right to compel the company to provide the medical attendance its charter calls for. Indirectly it rests on the policy holders, as they elect the officers and they should select men incapable of injustice. In regard to the lack of sympathy on the part of the general public, he remarks: "Since when have physicians ever received any sympathy from the public in their claims? Have the decisions of our medical chambers ever met with public sympathy? The stand of the profession in regard to the charlatan question raised a great hue and cry in the lay press in regard to our short-sighted and narrow-minded policy. Have we ever won any friends by our stand in regard to medical women, the technical schools, etc.? Any one who claims his rights may count on the hostility of the multitude, and we physicians will have to accustom ourselves to accomplish our just purposes in spite of the ill-will not only of the general public but also of the public authorities."

Bolletino della Soc. de Ost. e Gin., Florence.

- 67 (I, 8-9.) Two Cases of Extramedian Symphysiotomy. Pestalozza.—Due casi di taglio lateralizzato del pube.
- 68 Ibid. One Case. Scarlini.—Il primo caso di taglio lat. del pube nella Clinica di Siena.
- 69 Ibid. One Case. Saladino.—Il secondo caso di taglio lat., etc.
- 70 Endoteloma del collo dell' utero. Cova.
- 71 Isterectomia per corioepitelloma. Santi.
- 72 Case of Acute, Fatal, Yellow Atrophy of Liver in Second Day of Puerperium. Mascagni.—Un caso di atrofia giallo acuta del fegato in 2 giorno di puerperio.

Gazzetta degli Ospedali, Milan.

- 73 (No. 8.) *Psicopatie coreiche e significato etimologico. S. Mircoli.
- 74 Contributo allo studio della gangrena nel corso della febbre tifoida. A. Lorenzoni. One fatal case.
- 75 Caso di mola idatiforme associata a degenerazione cistica delle ovaie (ovary). G. Monzarde.
- 76 Toracentesi e vescicanti (and blisters). V. Luzzatti.
- 77 Vescica artificiale ovvero drenaggio a permanenza per lo svuotamento dei versamenti sierosi (continuous drainage of serous effusions). B. Giovanni.
- 78 *Sull' impiego del calomelano nella cura della polmonite (calomel in pneumonia). C. Bertazzoli.
- 79 Dispragia intermittente angiosclerotica ed embolismo della poplitea. N. Introna.
- 80 (No. 11.) *Serum Treatment of Leukemia. L. Lucatello and C. Malon (Padua).—Di un siero leucolitico antileucemico.
- 81 L'alcol in oculistica. B. U. Arturo.

- 82 *Jez's Extract Treatment of Typhoid. M. Subaldi.—Breve cenno sull' estratto Jez nella terapia dell' Ileo tifo.
- 83 Raccolte (accumulations) endotoraciche pulsanti. E. Maragliano.
- 84 (No. 14.) Le corree dal modern punta di vista. S. Mircoli.
- 85 *Le manifestazioni cutanee da malaria. A. Vaccari.
- 86 Successful Use of Antidiphtheria Serum in Case of Cachectic Aphthous Fever. Del Monaco-Concezio.
- 87 *Novello contributo alla cura delle anemie colle iniezioni ipodermiche di soluzioni di arseniato di ferro. N. Fedeli.
- 88 Pleurite essudativa epidemica. A. Muratori. Six cases.

73. **Choreic Psychopathy.**—Mircoli describes a few typical cases to illustrate his idea that the various forms of chorea, if accompanied by mental disturbances or change of character, have each a special type of psychopathy. The degenerative form of chorea is accompanied by psychic disturbances such as are noted in degeneracy from any cause, hereditary or acquired. The rheumatic form is accompanied by caprices and a tendency to agitation. In the psycho-traumatic variety the mental phenomena observed are those of depression with a tendency to melancholia. It may be possible sometimes to trace back to the cause of the chorea by observing the character of the psychopathy accompanying it.

78. **Calomel in Pneumonia.**—Bertazzoli has long been proclaiming that calomel in infectious diseases is able to lower the temperature to a degree that amounts to a pseudo-crisis. It causes revulsion in the intestines, he asserts, diverting part of the blood from the inflamed organs and in pneumonia thus averting the danger of edema of the lungs, while regulating the circulation there. The calomel passages carry away from the organism a quantity of the toxins which otherwise would circulate in the blood and depress the nervous system, adding their dangerous effect to the intoxication with carbonic acid gas, so intense in this disease. The microbicidal action of calomel supplements its effect in other ways.

80. **Serum Treatment of Leukemia.**—Rabbits and sheep were inoculated with leucocytes derived from patients with leukemia. The blood withdrawn was set aside to settle spontaneously which allowed the leucocytes to be collected free from red corpuscles or serum. The rabbits thus received forty-seven endoperitoneal injections of 5 to 10 gm. of leucocytes in the course of thirty to forty-five days. The sheep received nine injections in the external jugular vein at intervals of two to twelve days. The serum of the animals thus treated displayed *in vitro* marked destructive action on human leucocytes, and 3 patients with leukemia were treated with it by subcutaneous injections of about 1 to 5 c.c. of this serum, usually on alternate days. One patient with 560,190 leucocytes before treatment, received twenty-six injections and the leucocytes then numbered 375,720 per mm. The enlarged spleen was also much reduced in size during the serum treatment. The second patient was in a very advanced stage of the disease and no benefit was apparent from the twenty-eight injections made. In the third case the leucocytes fell only by 7,660 from the original figure of 500,960 after eleven injections, a total of 42 c.c. of serum in thirteen days. The proportion of uric acid in the urine rose from .70 to .95 and the size of the spleen was very much reduced. The injections caused no by-effects in any instance and were perfectly tolerated.

82. **Jez's Extract in Treatment of Typhoid.**—The extract is made from the organs of animals injected two or three days before with typhoid bacilli. Sibaldi was much impressed with the rapid improvement that followed its use in two exceptionally severe cases of typhoid fever. As much as 200 c.c. can be injected without disturbances. The heart and pulse are favorably affected, as also the nervous symptoms. It induces copious urination and the temperature subsides. The extract is given by the spoonful every two hours. Its effect is manifest by the second day and by the third day two liters of urine were voided. In a third case the extract was given in hopes to abort or cure a prostatic abscess in the course of typhoid fever, but no appreciable benefit was derived. The patient succumbed.

85. **Cutaneous Manifestations of Malaria.**—Vaccari has observed a few cases of a dermatosis resembling urticaria, but free from pruritus, which accompanied attacks of malaria and vanished under exhibition of quinin. Other Italians have

reported an exanthem resembling that of scarlet fever or measles, with desquamation, occurring likewise associated with or as a manifestation of malarial infection. Vaccari observes that these cutaneous phenomena in malaria indicate a severe type of the disease, and thus have a certain value for the prognosis.

87. Ferric Arseniate in Anemia.—The soluble ferric arseniate used in Italy has been applied by Fedeli in twenty cases of anemia with exceptionally favorable results, as he shows by the clinical histories. The age of the patients ranged from 10 to 38. Zambeletti's citro-ammoniacal preparation was administered by subcutaneous injection for two or three months and all the patients gained several pounds in weight, while the composition of the blood and the general health returned to normal.

Riforma Medica, Palermo.

- 89 (Nos. 190-1.) *Sopra un tumore ovarico di genesi dal corpo luteo.* A. Michelazzi.
- 90 (Nos. 192-3.) *Osservazioni sul potere (power) isoagglutinanti ed isolitico di sieri di sangue umano (of human blood serum).* C. Bezzola.
- 91 (No. 194.) *Appunti sulla malaria del mezzogiorno (malaria at midday) d'Italia.* F. Martirano.
- 92 (Nos. 195-6.) *Cranial Asymmetry as Studied in 434 Skulls.* V. Nistino.—*La plagiocefalea.*
- 93 (Nos. 197-200.) *Bullet Wound of Spine and Lumbar Enlargement—Instantaneous Paraplegia—Complete Recovery After Extraction of Bullet.* A. Virdia.—*Ferita d'arma da fuoco della colonna vertebrale e del rigonfiamento lombare, etc.*
- 94 (No. 201.) *Cerebellum Traversed by Pitchfork—Double Craniectomy—Recovery.* A. Ghedini.—*Craniectomia doppia per ferita del cervello.*
- 95 (No. 202.) **Sulla formazione dei tossoidi (of toxoids) nelle colture di bacillo del tetano.* A. Bonome.
- 96 (Nos. 203-206.) **Degenerazioni croniche del miocardio in rapporto collo aritmia (in relation to arrhythmia).* B. Francesco.
- 97 (No. 207.) *Great Benefits from Lime in 14 Cases of Epilepsy.* A. Bonelli.—*Azioni del calcio negli epilettici.*
- 98 (No. 208.) *Glicosuria e levulosuria alimentare nelle malattie del fegato (in liver affections).* L. Ferrannini.—See abstract in JOURNAL of January 31, p. 343.
- 99 (No. 209.) **La saccaromicetolisi.* F. Sanfelice.
- 100 (No. 210.) *Carcinoma medullare primitivo del polmone (of lung).* A. Pitini and F. Mercadante.
- 101 (Nos. 211-12.) *Diabete insipido trasformatosi poscia in melito e ipertrofia della prostata.* G. P. Morano.

95. Toxoids in Tetanus Cultures.—Bonome announces that he found it possible to attenuate the tetanus toxin in cultures by addition of coli toxins.

96. Arrhythmia in Relation to Chronic Degeneration of Myocardium.—Francesco's experience indicates that arrhythmia is invariably pronounced when the musculature of the auricle is in a condition of fibrous degeneration, with or without the involvement of the musculature of the ventricle in the process. On the other hand, degeneration of the auricular appendage, even with advanced degeneration of the walls of the ventricle, is not accompanied by any arrhythmia.

99. Saccharomycetolysis.—Sanfelice states that the serum of animals treated with the proteins of blastomycetes contained antibodies which transformed the parasites into fuchsinophile bodies.

Medizinskoe Obozryenie, Moscow.

- 102 (Nos. 13-14.) **K etiologii ostrogo voshkodyashchikh paralizov (acute ascending paralysis).* *Staphylococcemia.* V. Muraveff and V. Turutin.
- 103 *Ryadkii sluchai traumaticheskova paralysa alternans.* A. A. Byelsky and I. T. Kaplan.
- 104 **O simptomatologii pri zlokachestvennykh novoobrazovaniyakh plevry (malignant neoplasms in pleura).* L. E. Golubinin.
- 105 **Review of Works on Diagnosis, Pathology and Therapy of Lungs and Pleura During 1901.* Kotovskikhoff.
- 106 **O lyetchenii Sydenham'ovoi chorei myshyakom (with arsenic).* S. M. Timasheff.
- 107 (No. 15.) **Two Cases of Bullet Wounds of Skull.* P. Tikhoff.—*K kasuistikye ognestrelnykh povrezhdenii tcherepa.*
- 108 **Restoration of Nasal Septum.* P. I. Kuzmin.—*Novye sposoby vozstanovleniya razrushennoi nosovoi peregorodki.*
- 109 **O lichen planus slizistykh obolotchek (of mucous membranes).* M. A. Tchlenoff.
- 110 **Tuberculous Stricture of Intestine.* A. V. Nikolsky.—*O tub. suzhenii kishek.*
- 111 *Shto takoe sarcome angiolplastique Malassez i Monod?* G. V. Vlasoff.

102. Etiology of Acute Ascending Paralysis.—A man of 55, with no special antecedents except a family tendency to excessive hemorrhages from slight cuts, noticed slight fever and delirium, with pains and weakness in the legs and round red spots on the thighs, extending later over the body. Urina-

tion was difficult. By the eighth day the right arm became completely paralyzed, and later the left, and lesions developed in the buccal cavity. Except for the first few days the patient's mind was clear during the entire affection, which progressed to a fatal termination, with symptoms of edema of the lungs, ten days after entering the hospital and twenty-seven after the first manifestations of the trouble. Examination of the blood the twenty-second day revealed large numbers of the staphylococcus albus. Thoinot and Masselin have reported experimental research on rabbits, in which they induced paralysis by inoculation with the staphylococcus aureus. Strümpell was able to cultivate the staphylococcus from a case of acute transverse myelitis and pachymeningitis. Eisenlohr also found this micro-organism in the central nervous system in a case of Landry's paralysis, as also Wokenius in a case of multiple neuritis (St. albus). Sukhanoff has also published a case of multiple neuritis and abscesses in the skin and internal organs due to staphylococci, accompanied by melancholia and Korsakoff's psychosis. Dogliotti also derived staphylococci from the pus of an abscess in the medulla oblongata. In the case described in the present article the probabilities are in favor of the assumption that the acute ascending paralysis was the consequence of general infection with the staphylococcus albus, and that both the spinal cord and the peripheral nerves were affected, the former predominantly. Both cutaneous and tendon reflexes were abolished, and the paralysis was most marked in the upper extremities. The blood was examined again immediately after death, but this time the results were negative. The germs may, therefore, vanish from the blood during the course of staphylococcemia, which explains the rarity of its discovery.

104. Differentiation of Malignant Tumors in Pleura.—Golubinin relates in detail a case to illustrate the various points important for the diagnosis, the pain, the pleuritis usually with effusion, but distinguished by the absence of fever. The effusion is seldom serous or purulent, more frequently it is hemorrhagic, sometimes chylous. It is not as abundant nor as diffuse as in case of ordinary pleuritis. The sputa become blood stained if the growth involves the lungs. The side of the thorax is also liable to become contracted from development of cicatricial tissue within. The most important signs are the rapidly developing anemia and cachexia, the presence of particles of the tumor in the pleural effusion and the discovery of enlarged glands and metastatic nodules in the skin and subcutaneous tissue, the protracted, non-febrile course, the irregular outline of the dullness and occasionally the severe pains.

105. Review of Literature on Lungs and Pleura in 1901.—Nearly a hundred pages are devoted to this review of 685 communications published in all quarters of the globe. American literature is extensively represented.

106. Treatment of Sydenham's Chorea with Arsenic.—Timasheff describes his experience with 26 cases of chorea. He found that an aqueous 1 per 1000 solution of arsenious acid afforded the best results. He deprecates the large doses recommended by Comby, and seldom gave more than three teaspoonfuls a day, finding that the desired results were attained fully as rapidly as with the larger doses. He thinks that more attention should be paid to the underlying cause of the affection. He was unable to detect any special relations between the duration of the disease and the length of treatment or the prevention of relapses.

107. Bullet Wounds of Skull.—Tikhoff describes two cases to support his plea of the necessity of trephining as a routine measure in bullet wounds of the skull, and the harm that may result from neglect of this measure.

108. Restoration of Nasal Septum.—Kuzmin makes two parallel incisions in the upper lip close to the median line, but not reaching to the extreme outer margin. A transverse incision close to the nose allows a rectangular flap to be raised, still connected at its base in the margin of the lip. The flap is then sutured to the nose in such a way as to give the aspect of the normal septum. After eight to ten days the flap is severed completely from the lip and the suturing to the

nose completed. The edges of the wound in the lip are brought together and sutured. The cosmetic effect is very satisfactory.

109. **Lichen Planus of Mucous Membranes.**—In Tchelenoff's case the patient exhibited typical lichen planus on face and neck, and the same lesions were also prominent in the mouth. He reviews the similar cases on record and observes that lichen planus has been noticed on the mucosa of mouth, throat, anus and urethra. It may develop at these points primarily and without appearing on the skin, but is usually secondary to cutaneous manifestations. The prognosis is generally favorable, especially under prolonged and energetic administration of arsenic.

110. **Tuberculous Stricture of Intestine.**—Nikolsky has been studying the records of 150 cases of tuberculous stenosis of the intestines, as published in the literature. They can be grouped as those with an acute sudden onset, those with a gradual development and those with a latent course. It is secondary in about 50 per cent. of all cases, and usually manifests itself between 20 and 40 years of age. Before 10 and after 60 it is extremely rare, although three cases are known before 9 and one case after 60. The stricture generally develops in the lower part of the ileum. Multiple strictures occur nearly as frequently as the single, and multiple strictures prove almost invariably to be of a tuberculous nature, as also all strictures whose etiology is not clear. Treatment is exclusively surgical, the sooner the better. The mortality after resection was 30 per cent., and after enteroanastomosis 17 per cent.

Russki Vrach, St. Petersburg.

- 112 (I, No. 34.) Experimental Data in Regard to Tuberculosis of Joints and Trauma. N. N. Petroff.—Exp. dannya po voprosu bugortchakye sustavov v svyazi s povrezhdeniyami.
- 113 (No. 35.) K patologii Fallopl'evykh Trub. I. M. Lvoff.
- 114 Influence of Atropin and Eserin on Blood Supply in Head. A. M. Kalinin.—O vliyani atropina i physostigmina na krovosnabzhenie golovy.
- 115 Critical Analysis of Pawlow's Theory in Regard to Digestion. L. B. Popelsky.—O tzyelecoobraznosti v rabote podzheludochnoi i zheludochnykh zhelez.
- 116 *Treatment of Tetanus with Brain Emulsion. I. E. Tikanadze. K lyetcheni stolbnayaka vpryskivaniyami mozgovoi emulsii.
- 117 (Nos. 36-37.) Werlhof's Disease. S. V. Levashoff.—O raslytchnykh formakh W. bolezni.
- 118 *Cutaneous Hyperalgesia in Relation to Affections of Internal Organs. B. Y. Gebstein.—O hyperalgesiyakh kozhi i svyazi ikh s zaboi organov.
- 119 *O professionalnoi pollutze i spermatorrheye. N. A. Bogoraz. (Commenced in No. 34.)
- 120 Influence of Artificial Light on Consciousness and Working Capacity. R. A. Katz.—O vliyanie iskusstvennaya osveshchaniya na samotchnost i rabotosposobnost.
- 121 Malaria and Mosquitoes. V. V. Favre.—O zavisimosti mezhdu bolotnoi likhoradko i komarami anopheles.
- 122 Conservative Treatment of Cord. V. A. Petroff.—Uproshchennii sposob perev'yazki i ukhoda za pupovnoi.
- 123 Clinical Study of Appendicitis. O. E. Hagen-Torn.—Nyekotorya klin. yavleniya i ikh znachenie pri appendicite.
- 124 (No. 38.) Zamyetka o school-hygiene. Photometrye. T. T. Petrushevsky.
- 125 1 Slutchal vrozhdennoi bronchiectasia u bolnaya s situs inversus viscerum. A. K. Siewert.
- 126 *Treatment of Acute Pyemia. J. Wernitz.—K lyetcheniu ostriykh gnilostnykh zabolyevani.
- 127 Profeta's Law. M. A. Tchelenoff.—O t. naz. "zakonye Profeta." (Commenced in No. 37.)
- 128 *K voprosu o lyetchenii Varoliy usilennoi (repeated) vaccinatsii. P. I. Braslavsky.
- 129 (No. 39.) Serum Treatment of Cattle Plague. A. A. Yurgelunas.—O syvorotochnom lyetchenii sibirskoi yazyv.
- 130 Regulations in Regard to Lepers in Russia. K. K. Dehlo.—Po povodu novyeishikh postanovlenii o prizryenii prokazhennykh v Rossii.
- 131 (No. 40.) *Reviving the Heart After Death. A. A. Kuliabko.—Novye opyty ozhivleniya serdtsa. Ozhivlenie tchelovetcheskova serdtsa.
- 132 Effect of Resection of Liver on Gaseous Interchanges in Animals. Y. Y. Postoff.—Resectio petcheni i vliyanie yego na gazoobmen u zheivotnykh.
- 133 (No. 41.) *Primary Tuberculosis of Spleen. T. I. Romanoff.—Pervitchnaya bugortchatka selezhenki.
- 134 *New Method of Reviving in Case of Asphyxia Neonatorum. G. K. Minkevitch.—Novyi sposob ozhivleniya pri asphyxia neonatorum.
- 135 Ulcus Pharyngis Supposed Malarial. P. K. Haller.—Malarialnaya yazva glotki.

116. **Treatment of Tetanus With Brain Emulsion.**—Tikanadze reviews the four cases of tetanus treated with brain substance on the principle of "side chain immunity," which have been published by Krokiewicz, Schramon, Schuster and Rostovtzeff. All the patients recovered, and he describes a case personally observed in which the recovery was also rapid and complete. After the failure of chloral and other measures

in a severe case of tetanus in a girl of 11, he commenced on the eighth day to treat her with brain emulsion. He obtained the head of a freshly slaughtered young pig and removed the brain and ground it in a sterilized porcelain mortar with sterilized physiologic salt solution, until a reddish fluid was obtained, which passed readily through the medium sized tip of the syringe. He thus injected subcutaneously 10 gm. of brain substance emulsified in 30 c.c. of the salt solution. Improvement was apparent by the next day. He repeated the injection again the next and the following days, and recovery was satisfactory. He adds his appeal to Rostovtzeff's that physicians should not fail to use the brain emulsion in cases of tetanus, especially when tetanus antitoxin is not obtainable.

118. **Cutaneous Hyperalgesia in Affections of Internal Organs.**—Gebstein urges further research in this line, as it may clear up the diagnosis in many dubious cases if the laws governing it can be determined. He describes and illustrates a dozen typical cases to show the variety in the location of the hyperalgesia. The region affected was sometimes, but by no means invariably, a girdle or zone, and it did not always correspond with Head's outlines. He found that hyperalgesia occurred regularly in certain regions, with an affection of any of the internal organs, but it was not an invariable accompaniment of an internal affection. The hyperalgesia observed in his cases always vanished on recovery from the internal affection.

119. **Professional Pollutions and Spermatorrhea.**—Bogoraz has examined hundreds of railway employes, and has found that pollutions and spermatorrhea are very common among them. Engineers are especial sufferers. The nervous strain of their profession and the constant jar of the engine causing friction between the sexual organs and the clothing, with the venous congestion in the lower part of the trunk and legs, cause constipation and frequent pollutions and spermatorrhea. He gives tables showing the comparative proportion affected among the various groups of railroad employes. He adds that they attribute the exaggeration of this pathogenic tendency to the introduction of the "American" system of long trips and sleeping on the cars.

126. **Treatment of Acute Pyemia.**—Wernitz gives the temperature curve and details of two severe cases of septic puerperal infection rapidly cured after application of the almost continuous rectal irrigation, which he described also in another article, of which an abstract was given in THE JOURNAL of March 14, p. 745.

128. **Treatment of Smallpox with Repeated Vaccinations.**—V. O. Hubert published in Russia, in 1886, an account of remarkably favorable results obtained by him in more than 200 cases of smallpox which he had treated by repeated vaccination, vaccinating the patients two or three times a day during the first six days of the disease. All recovered. Other Russian writers have published similarly favorable reports on a smaller scale, and Braslavsky now adds eight more cases to the list. The results were eminently good, although half of his cases were severe. He considers himself justified in recommending the method for wider adoption in the treatment of "natural" smallpox.

131. **Revival of Isolated Heart After Death.**—Kuliabko has continued his researches previously reported on the possibility of reviving and inducing spontaneous pulsation in the heart of warm-blooded animals two to four, and even five days after death of the animal. He announces that he has succeeded in accomplishing the same in the case of the heart of a three-months infant on the second day after the death of the child from pneumonia. A canula is inserted in the aorta, as suggested by Langendorff, and warm Locke's solution, saturated with oxygen, is forced through the heart. This is a solution of equal parts of CaCl_2 , KCl and NaHCO_3 , each .02 per cent.; NaCl , .9 per cent., and dextrose .1 per cent. After this fluid had coursed through the heart for about twenty minutes, almost imperceptible movements were noticed in the right auricle, spreading thence to the right ventricle, whereupon the entire heart commenced to beat. This spontaneous pulsation of the

heart continued for more than an hour. The more or less faintly rhythmical pulsation of the ventricles and auricles under the influence of artificial irrigation with the above fluid was a weird sight, knowing that the owner of the heart had been dead thirty hours. It remains to be seen whether the facts thus learned will prove of any practical value, but they certainly suggest, he remarks, the possibility that, in exceptional cases, artificial irrigation of the heart with a warm salt solution might possibly be attempted as the very last resort.

133. Primary Tuberculosis of Spleen.—Romanoff's patient was a man of 80. It is the tenth case that has been published, he states. The lesion was of the "spleno-hepatic" type, described by Collet and Gallavardin. When admitted to the hospital (Tomsk), a few days before his death, the spleen formed a large tumor. He stated that he had been healthy except for a period of five months forty years previously, when he had expectorated blood and had more or less fever. The microscopic findings are described in full.

134. Resuscitation in Asphyxia Neonatorum.—Minkevitch seats the child on a flat surface and bends the trunk backward over a solid roll of cloth, which elevates the thorax while allowing the head to touch the flat surface of the table beyond. The trunk is then brought up and carried forward until the head is between the infant's knees. A few repetitions of the procedure are usually sufficient.

British Medical Journal, London.

February 28.

- 136 *Some Cases Simulating Acute Appendicitis. Arthur E. Barker.
- 137 *Pathology and Symptoms of Adenocarcinoma of the Rectum. Charles B. Ball.
- 138 Case of Dilatation of the Pylorus for Simple Stricture. Horatio P. Symonds.
- 139 A Simple Method of Operating on Piles. A. B. Mitchell.
- 140 Note on Intestinal Anastomosis: Special Forceps. T. Carwardine.
- 141 *The Presence of Diphtheria Bacilli in Atrophic Rhinitis. J. Odery Syms.
- 142 *The Bilberry. James Sawyer.
- 143 Case of Ruptured Urinary Bladder: Operation and Recovery. Hugh Lawrie.
- 144 *The Open-Air Treatment of Syphilis. E. H. Douty.

136. Simulation of Appendicitis.—Barker reports his experience with conditions simulating appendicitis among which are ruptured pyosalpinx, strangulated ovarian cyst with twisted pedicle, strangulated omentum, perforated gastric ulcer, retrocecal hernia, broken down caseating glands, ileocecal cancer with abscess, hematoma of broad ligament, reduction of hernia *en masse* and intussusception. Some of these are rare, while others such as ruptured pyosalpinx, broken down caseating glands, etc., are much more common. Intussusception ought never to be mistaken for appendicitis, yet it is. In some other conditions like gastric ulcer, the diagnosis may be very difficult.

137. Adenocarcinoma of the Rectum.—In this second lecture, Ball describes adenocarcinoma, which, while not exclusively the type of malignant disease occurring in this region, is still by far the predominant one. Hardly 5 per cent. of malignant growths there situated are of any other variety. It is met more frequently after middle age, but many cases are recorded in which it commenced in early life and he has seen it at the ages of 16 and 18 respectively. Both sexes appear to be affected alike. When met in young persons it is apt to be highly malignant and rapid in its course. He describes two forms, one commencing as a flat tubercle, ending in a sort of oval ulcer, spreading over the circumference of the bowel. The other, a slower type occurring in older persons without the exuberant edges, is a growth less in quantity and more atrophic, with a tendency to dense connective tissue formation around the ulcerated surface. The morbid histology is described at length and illustrated. The symptoms are, first, diarrhea, a good deal of mucus, etc., and later symptoms of obstruction and pain. Involvement of the other organs may occur if it progresses. He insists on the importance of an early diagnosis and of digital examination to detect the condition. This can be performed, if necessary, under anesthesia by the bimanual method. If the tumor is freely movable and no enlarged glands or metastatic growths can be felt, and the

general condition of the patient is good, it is suitable for operation. If there is limited adhesion or lymphatic involvement, operation may be undertaken, but the prognosis is not so good, but if there is an extensive involvement of the adjoining organs and metastatic growths can be detected in the abdomen, operation is absolutely contraindicated.

141. The Diphtheria Bacillus in Atrophic Rhinitis.—Syms has investigated twenty-three cases of atrophic rhinitis for the diphtheria bacillus and found an organism closely resembling it in twenty of the cases. Control examinations were made on healthy noses, and in no instance was a similar microbe found. Culture experiments in one or two cases also proved the pathogenicity of the organism. There were certain slight differences observed, the bacillus was more curved and thinner and more highly metachromatic than the Klebs-Loeffler bacillus and rather closely resembled the tubercle bacillus. He offers the following conclusions:

If the foregoing facts can be sustained, and the identity of this bacillus with the Klebs-Loeffler bacillus can be established, then we may regard atrophic rhinitis as a chronic form of nasal diphtheria. In addition to the bacteriologic evidence the following points may be considered in support of this theory:

1. In diphtheria the accessory sinuses of the nose are constantly infected. Bacilli may remain in the sinuses for prolonged periods, exciting a purulent, sero-purulent, or serous discharge.
2. Chronic suppuration in the accessory sinuses is, in the opinion of many eminent rhinologists, the direct exciting cause of the conditions of ozena and atrophic rhinitis.
3. Multiple cases of atrophic rhinitis in the same household occur from time to time, as one would expect if the process were a true infection. Thus Terez records twelve instances in which there were two or more sufferers in the same family. This is a point I have not inquired into amongst my own series of cases.
4. An attack of diphtheria may be the starting point of atrophic rhinitis. Only two patients in the present series dated the onset of symptoms from an attack of diphtheria, but the history of all was not inquired into.
5. Atrophic rhinitis, like diphtheria, attacks females more than males; it is a disease of early life, and induces a pronounced anemia and leucocytosis.
6. Atrophic rhinitis has been successfully treated by diphtheria antitoxin. With regard to this point, my experience has been so limited that I do not feel justified in saying more than that if repeated moderate doses of antitoxin are administered regularly, amounting in all to 20,000 units, marked relief of symptoms results.
7. In atrophic rhinitis the type of diphtheria bacillus does not alter during the progress of the case, a fact which Woodhead has recently found to hold true in acute faucial or nasal diphtheria.

He says, apart from the theory that atrophic rhinitis is the chronic form of nasal diphtheria, a practical point is that cultures taken from these noses may cause isolation of patients.

142. The Bilberry.—Sawyer notices the bilberry communication in a previously issued abstract in THE JOURNAL of February 28, ¶19, p. 610, and suggests further investigation of the subject.

144.—This article has appeared elsewhere. See THE JOURNAL of February 14, ¶18, p. 469.

The Lancet, London.

February 28.

- 145 Some Famous Medical Officers of the Army. Norman Moore.
- 146 *Gastroenterostomy and Its Uses, with a Description of the Operation as Performed by the Author. A. W. Mayo Robson.
- 147 Lunacy and the Lay. T. Outtersson Wood.
- 148 *The Gelatin Treatment of Hemoptysis. H. M. Tickell.
- 149 *The Uses of X-Rays in Ophthalmic Surgery. M. S. Mayou.
- 150 *The Treatment of Epileptics. Fletcher Beach.
- 151 The Theory of Retinoscopy. E. Kenneth Campbell.
- 152 A New Method of Treating Fractures of the Shaft of the Femur. J. P. Lockhart Mummery.

146. Gastroenterostomy.—Robson reviews the methods and indications of this operation. He prefers the posterior operation, which is favored by his experience. The later results of operation have been much more favorable than the former. While only three or four years ago, from what he was enabled to collect from all sources, there was a mortality of 36.4 per cent., now he can point to a considerable series of cases with a mortality of only 5 per cent. He is not in favor of the Murphy button for this operation, though it is used almost exclusively by some German surgeons. He would employ it only when the greatest speed was imperative. Complications such as regurgitant vomiting, subsequent contraction of the new orifice, pneumonia or pleurisy, peptic ulcer, adhesions, causing intestinal obstruction, lack of union, passing of the small intestine through the loop, etc., are all noted. He gives a long series of conditions which indicate this operation:

Pyloric stenosis, from either simple or malignant disease, congenital forms, congenital pyloric atresia, chronic gastric ulcer, with doubtful tumor too extensive for removal, not necessarily associated with stenosis, duodenal cancer or tumor causing obstruction, and hour-glass stomach are indications for gastroenterostomy. In perigastritis, adhesions around the pyloric, causing obstructive symptoms, may be too extensive for gastroenterostomy. Dilatation of the stomach, depending on pressure outside the pylorus from inoperable tumor of the pancreas, liver, or gall bladder are imperative indications, as soon as the diagnosis is established. In the second series, cases in which it is indicated after failure of medical treatment, are included acute or chronic gastric ulcer, duodenal ulcer, hemorrhage from such ulcer, persistent spasm of the pylorus, or Reichmann's disease with gastric dilatation, hyperchlorhydria, persistent gastralgia, tetany of gastric origin, acute gastric dilatation not yielding to lavage and general treatment, pancreatitis secondary to gastric ulcer, certain cases of jaundice depending on gastric or duodenal ulcer, leading to thickening around the common bile duct and simple atonic dilatation of the stomach after failure of lavage and general treatment. In some of these cases operation is advisable simply to obtain physiologic rest and favor natural processes. The operation is here only a last resort when everything else has failed.

143. The Gelatin Treatment of Hemoptysis.—Tickell recommends the use of gelatin by the rectum in cases of hemoptysis, and reports a case. Since then he has applied the same method to other patients with the same favorable results. The solution is prepared as follows: 50 grams of gelatin are dissolved in one and one-quarter liters of boiling water and boiled very gently for an hour, when the volume is reduced by evaporation to one liter. This solution is then cooled down to body temperature, and one-quarter liter is slowly passed into the rectum from an ordinary irrigator at a height of two or three feet. The injection does not cause any action of the bowels, is entirely painless, and there is no danger of infection if properly managed, no rise of temperature and, of course, no necrosis. The treatment can be carried out in general practice. He would give it three times a day, until the sputum ceases to show any trace of blood.

149. The X-Rays in Ocular Surgery.—Mayou points out the uses of the x-rays in the location of metallic foreign bodies in the globe and gives a method of employing them. He also recommends them for rodent ulcer of the eyelid and trachoma. In the latter condition he does not use a mask, but just seats the patient about nine inches from the anode, with a moderately soft tube and a current of six amperes for a two minutes' exposure on four to six successive days, according to the case. If there is much injection, or the case is very acute, four will be sufficient. Later he employs it two or three times a week and has had excellent results.

150. Epilepsy.—Beach believes in the bromids for the drug treatment of epilepsy, and prefers the compound of bromid of sodium, ammonium and potassium. If only one is required he gives the bromid of ammonium, and, in some cases, has found the combination of antipyrin with bromid useful, giving it in doses of 10 gr. three times daily for adults and in a lesser quantity for children. Where the fits occur at night, he gives a double dose at bedtime and, if they are frequent, a single large dose only at that time. If they come in the early morning, he gives the dose before the patient rises and has him remain in bed an hour after taking it. He has not great faith in chlorid reduction in these cases, but would give tonics, such as cod liver oil, and keep the bowels well open and occasionally a high saline rectal douche should be given.

Journal of Tropical Medicine, London.

February 16.

- 153 Notes on Case of Omuono (Yaws). A. Yale Massey.
154 Beri-Beri in Queensland. Edward B. Ormerod.
155 Malaria and Malignant Diseases in Hot Climates. James Cantile.

154. Beri-Beri in Queensland.—Ormerod describes the conditions of life of the Queensland bushman, whose diet consists

mainly of flour, salt meats, sometimes condiments and tea with every meal and between them. The water is very bad, and is often infected by dead animals, etc. Artesian wells are being introduced, which contain more or less magnesia, sometimes causing slight urethritis and general purging at first. Another source of infection is in the dust storms which occur. Rainwater is also used considerably. He has not met any cases of peripheral neuritis or beri-beri in those who only drank rainwater from tanks.

Indian Medical Gazette, Calcutta.

February.

- 156 *An Analysis of One Thousand Consecutive Cataract Extractions. (To be continued.) F. P. Maynard.
157 *Neurasthenia in Anglo-Indians. E. F. Gordon Tucker.
158 Notes on the Origin of the Presidency General Hospital, Calcutta. (Continued.) D. M. Mohr.
159 *Note on the Bacteriology of Dysentery and the Value of the Serum Test in Its Differentiation. Leonard Rogers.
160 Glioma of the Retina. B. H. Nanavatty.

156. Cataract Extractions.—One thousand cases are here analyzed, including the 300 published in 1901. Maynard describes his methods of examination and his results, which were good in 89 per cent., indifferent in 5.7 per cent., and bad in 4.5 per cent. and unknown in eight cases. What he calls good is vision ranging from 0.36 to 0.6 with correcting glasses; indifferent results where the sight was bad, but sufficient to enable the patient to move about alone, and bad results where the sight was lost. He finds a family history in nearly 24 per cent. of his cases. The more intelligent the patient the more likely is the family history to be forthcoming. Of the other associated diseases, diabetes occurred in six cases, and the patients all did well. Fourteen patients had bronchitis and various other disorders occurred, but it does not appear that they affected the success of the operation very much.

157. Neurasthenia in Anglo-Indians.—Tucker recognizes two forms of neurasthenia, in men that from hepatic insufficiency, and in women a uterine derangement type, both of which are described at length, and the post-febrile group, which may occur in either sex. He thinks early and judicious treatment will prove successful in most cases. Many patients are allowed to go to the bad from neglect. The constant taking of alcoholic stimulants in small quantities to keep up brain energy is a very bad practice in male cases, as it accentuates the dangerous condition of the digestive organs. The patient's life should be carefully regulated, alcohol abstained from entirely or restricted to meals, amount of tobacco reduced, diet regulated, the use of Carlsbad salts in the early morning for a laxative, the teeth should be looked after, mild exercise taken once or twice a day to excite the action of the skin, but drafts should be carefully avoided after it and a flannel cholera belt should be worn at night, especially in the hot weather. Cold baths are injurious and should be prohibited. If the digestion is sluggish, a bitter, acid or some drug that will promote the functions of the intestinal canal is important, but the most important thing is mental rest. The patient should be told that he is suffering from no organic disease and should give up responsibilities. In women many cases are due to sub-involution, which is very largely overlooked, and the patients treated for anemia, dyspepsia, etc. The responsibilities of housekeeping and the care of the children should be removed. The patients should be advised to lay up for four weeks, passing the day on a couch and local treatment given for the uterus, hot vaginal douches in the horizontal position, massage of the limbs, etc.

159. Dysentery.—Rogers finds that in the cases which he has studied the organism resembles the Shiga bacillus. His observations point to the conclusion that the common form of India dysentery, prevalent in jails and other institutions, and not followed by the large tropical liver abscess, are produced by the Shiga bacillus or one very like it and can be differentiated from the much rarer and usually complicated cases of amebic dysentery by the positive serum reactions with the Shiga bacillus. His findings agree very closely with those of Flexner in this country.

New Patents.

- Patents of interest to physicians, February 17 and 24:
720783. Antiseptic attachment for telephone mouthpieces. Charles W. Clough, Watsonville, Cal.
721032. Electromedical belt. Frank Farmer, Richmond, Ind.
720918. Disinfectant distributing device. Samuel Hesketh, Auckland, New Zealand.
720812. Vaccination shield. Robert W. Johnson, New Brunswick, N. J.
720599. X-Ray tracer. Friedrich Moritz, Munich, Germany.
720863. Atomizer. Jacob Waldman, New York.
720865. Pneumatic massage apparatus. Robert Watson, Washington, D. C.
720648. Syringe. Edward B. Wilder, St. Louis.
12084. Re-issue, Composition for disinfecting or other purposes. Henry S. Blackmore, Mount Vernon, N. Y.
721162. Hemostatic bandage. Eduard E. Denain, Paris, France.
721185. Apparatus for administering anesthetics. Wm. A. Heckard, Indianapolis.
721574. Ankle-supporting corset-shoe. John J. Lattermann, New York.
721575. Maternity corset. Mary E. Leighton, New York.
721587. Operating table. Charles Lyons, Columbus, Ohio.
721454. Prescription file. John H. Lytle, Delphi, Ind.
721603. Truss. Henry T. Prange, Kalamazoo, Mich.
721489. Making citrate soluble phosphates. Wilhelm Wolters, Magdeburg-Buckau, Germany.

The Public Service.

Army Changes.

Movements of officers of the Medical Department U. S. Army, under orders from the Adjutant General's office, Washington, D. C., from Feb. 21 to 28, 1903:

Ames, Roger P., contract surgeon, U. S. A., now at New Orleans, will proceed to Fort St. Philip, La., and report in person to the commanding officer of that post for duty and by letter to the commanding general, Department of the East, to relieve Contract Surgeon Oliver H. Buford, U. S. A., who, on being thus relieved, will proceed to his home, Cartersville, Ga., and, on arrival, report by letter to the Surgeon-General of the Army for annulment of contract.

Mason, Charles F., major and surgeon, having complied with the requirements of Paragraph 1, Special Orders No. 26, Feb. 12, 1903, Department of Texas, will proceed not later than Feb. 28, 1903, to rejoin his proper station.

McAndrew, Patrick H., first lieutenant and asst.-surgeon, having reported his arrival at San Francisco, in compliance with orders heretofore issued, will proceed to Jefferson Barracks, Mo., and report in person to the commanding officer of that post for duty, and by letter to the commanding general, Department of the Missouri.

Tweedie, H. V., contract surgeon, U. S. A., is granted leave of absence for one month.

Navy Changes.

Changes in the Medical Corps of the Navy, for the week ending March 7:

Surgeon C. Biddle, detached from the Naval Hospital, Philadelphia, and ordered to the Navy Yard, League Island.

Surgeon E. S. Bogert, detached from the Recruiting Rendezvous, Buffalo, and ordered to the Philadelphia Naval Hospital.

Surgeon J. C. Byrnes, detached from Navy Yard, New York, ordered home and granted three months' sick leave.

Surgeon O. Diehl, detached from Navy Yard, League Island, and ordered to the Oregon, sailing from San Francisco, March 19.

P. A. Surgeon F. C. Cook, detached from Naval Hospital, Newport, R. I., and ordered to the Nevada.

P. A. Surgeon R. C. Holcomb, detached from the Naval Hospital, New York, and ordered to the Naval Hospital, Newport, R. I.

Asst.-Surgeon F. W. S. Dean, ordered to the Naval Hospital, New York.

Asst.-Surgeon R. L. Sutton, ordered to the Naval Hospital, Washington, D. C.

A. A. Surgeon J. B. Mears, ordered to the Naval Recruiting Station, Buffalo, N. Y.

Asst.-Surgeon C. E. Riggs, ordered to the Naval Hospital, Philadelphia.

P. A. Surgeon R. T. Orvis, detached from the Michigan, and ordered to duty with Marine Detachment at Culebra.

A. A. Surgeon T. G. Foster, ordered to the Michigan.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended March 5, 1903:

Surgeon H. R. Carter, to proceed to Morgantown, W. Va., for special temporary duty.

Surgeon G. M. Guiteras, to report at Washington, D. C., for special temporary duty, February 28. To proceed to Eagle Pass, Texas, for special temporary duty, March 2.

A. A. Surgeon C. P. Wertenbaker, to proceed to El Paso, Texas, for special temporary duty.

P. A. Surgeon M. J. Rosenau, detailed to represent Service at meeting of Special Committee on Diphtheria Antitoxin at Philadelphia.

P. A. Surgeon J. H. Oakley, granted leave of absence for seven days from March 1, 1903.

Asst.-Surgeon C. E. Decker, granted fourteen days' extension of leave of absence on account of sickness from Feb. 20, 1903.

Asst.-Surgeon L. L. Lumsden, relieved from duty at San Francisco Quarantine Station, and directed to proceed to Los Angeles, Cal., and Phoenix, Ariz., for special temporary duty.

Asst.-Surgeon J. W. Kerr, directed to assume temporary command of the Service at New Orleans, Feb. 28, 1903.

Pharmacist R. H. Gibson, granted leave of absence for seven days under the provisions of Paragraph 190 of the Regulations.

BOARDS CONVENED.

Board convened at Washington, D. C., March 2, for the physical re-examination of Chief Engineer Geo. Maher, Revenue Cutter Service. Detail for the Board: Assistant Surgeon-General W. J. Pettus, chairman; Assistant Surgeon-General H. D. Geddings, recorder. Board convened at Boston, March 9, for the physical re-examination of Lieut. B. H. Camden, Revenue Cutter Service. Detail for the Board: Surgeon R. M. Woodward, chairman; Asst.-Surgeon W. C. Rucker, recorder.

PROMOTIONS.

Asst.-Surgeon R. H. von Ezdorf, commissioned as passed asst.-surgeon, to rank as such from March 4.

Asst.-Surgeon J. F. Anderson, commissioned as passed asst.-surgeon, to rank as such from March 18.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 7, 1903:

SMALLPOX—UNITED STATES.

California: Berkeley, Feb. 18-25, 1 case; Los Angeles, Feb. 14-21, 3 cases; Sacramento, Jan. 25-Feb. 7, 4 cases; San Francisco, Feb. 15-22, 12 cases, 1 death.

Colorado: Denver, Feb. 7-21, 30 cases.

District of Columbia: Washington, Feb. 14-28, 6 cases, 1 death.

Illinois: Chicago, Feb. 21-28, 17 cases, 1 death.

Indiana: Elwood, Feb. 22-March 1, 3 cases; Evansville, Feb. 21-28, 4 cases; Indianapolis, Feb. 14-28, 57 cases, 16 deaths; Jeffersonville, Jan. 1-31, 1 case; Jeffersonville, Feb. 1-28, 5 cases.

Iowa: Davenport, Feb. 21-28, 4 cases.

Kansas: Douglas County, Jan. 1-31, 2 imported cases; Wichita, Feb. 21-28, 1 case, 1 death.

Kentucky: Lexington, Feb. 21-28, 1 case; Newport, Feb. 21-28, 1 case.

Louisiana: New Orleans, Feb. 21-28, 2 imported cases.

Maine: Biddeford, Feb. 21-28, 3 cases.

Massachusetts: Boston, Feb. 21-28, 2 cases; New Bedford, Feb. 21-28, 4 cases; Newton, Feb. 21-28, 1 case.

Michigan: Grand Rapids, Feb. 21-28, 14 cases; Marquette, Feb. 21-28, 1 case; Menominee, Feb. 14-21, 1 case; Port Huron, Feb. 21-28, 5 cases.

Nebraska: Omaha, Feb. 21-28, 3 cases.

New Jersey: Camden, Feb. 21-28, 5 cases; Jersey City, Feb. 22-March 1, 3 cases.

New York: Buffalo, Feb. 21-28, 1 case; New York, Feb. 21-28, 4 cases; Yonkers, Feb. 20-27, 1 case.

Ohio: Cincinnati, Feb. 20-27, 11 cases, 1 death; Cleveland, Feb. 21-28, 7 cases, 2 deaths; Dayton, Feb. 21-28, 1 case; Hamilton, Feb. 21-28, 2 cases.

Pennsylvania: Altoona, Feb. 21-28, 6 cases imported; Dunmore, Feb. 21-28, 3 cases; Erie, Feb. 21-28, 5 cases; Johnstown, Feb. 21-28, 3 cases; McKeesport, Feb. 21-28, 2 cases; Norristown, Feb. 21-28, 1 case; Philadelphia, Feb. 21-28, 37 cases, 1 death; Pittsburg, Feb. 21-28, 19 cases, 6 deaths, 4 cases imported; Pottsville, Feb. 21-28, 4 cases.

South Carolina: Charleston, Feb. 21-28, 7 cases.

Tennessee: Johnson City, Feb. 21-28, 7 cases; Memphis, Feb. 21-28, 5 cases.

Utah: Salt Lake City, Feb. 14-28, 39 cases, 1 case imported. Wisconsin: Green Bay, Feb. 22-March 1, 1 case; Milwaukee, Feb. 14-28, 11 cases.

SMALLPOX—FOREIGN.

Barbadoes: Jan. 31-Feb. 13, 9 cases, 1 death.

Belgium: Antwerp, Jan. 31-Feb. 7, 2 cases; Brussels, Jan. 31-Feb. 7, 6 deaths.

Canada: Winnipeg, Feb. 7-14, 1 case.

Canary Islands: Las Palmas, Jan. 24-Feb. 7, 69 cases, 2 deaths.

Ecuador: Guayaquil, Jan. 31-Feb. 7, 1 death.

France: Marseilles, Jan. 1-31, 37 deaths; Paris, Feb. 7-14, 1 death.

Great Britain: Birmingham, Feb. 7-14, 16 cases; Dublin, Feb. 7-14, 4 cases; Glasgow, Feb. 13-20, 1 case; Leeds, Feb. 7-14, 16 cases, 1 death; Leith, Jan. 31-Feb. 7, 1 case; Liverpool, Feb. 7-14, 6 deaths; London, Feb. 7-14, 1 case, 1 death; Nottingham, Feb. 7-14, 2 cases.

India: Bombay, Jan. 27-Feb. 3, 28 deaths; Calcutta, Jan. 24-31, 1 death.

Italy: Palermo, Jan. 31-Feb. 14, 11 cases.

Jamaica: Duan Vale, Feb. 1, present.

Japan: Kagawa Ken, Jan. 29, present; Yamaguchi Ken, Jan. 29, present.

Mexico: City of Mexico, Feb. 8-15, 6 cases, 2 deaths.

Netherlands: Amsterdam, Feb. 7-14, 3 cases.

Russia: Moscow, Jan. 24-Feb. 7, 9 cases, 3 deaths; Odessa, Jan. 18-25, 5 cases; St. Petersburg, Jan. 31-Feb. 7, 29 cases, 9 deaths; Warsaw, Jan. 31-Feb. 7, 1 death.

Turkey: Smyrna, Jan. 25-Feb. 1, 1 death.

YELLOW FEVER.

Colombia: Cartagena, Feb. 9-15, 2 deaths; Panama, Feb. 11-18, 2 cases.

Ecuador: Guayaquil, Jan. 31-Feb. 7, 21 deaths.

Cuba: Havana, Feb. 14-21, 1 case, 1 death, imported from steamship Esperanza from Progreso.

Mexico: Contzacoalcos, Feb. 7-14, 1 case, 1 death.

CHOLERA.

India: Calcutta, Jan. 24-31, 53 cases.

PLAQUE—FOREIGN.

India: Bombay, Jan. 27-Feb. 3, 551 deaths; Calcutta, Jan. 24-31, 97 deaths; Karachi, Jan. 25-Feb. 1, 26 cases, 19 deaths.

Mexico: Mazatlan, Jan. 24-Feb. 7, 89 cases, 53 deaths.

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Original Articles.

IODIZED CATGUT.

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Absorbable suture and ligature material has held its place in surgery since Lister first introduced it into general practice. At times it has appeared as though it would become displaced by inabsorbable permanent material, but the general tendency at the present time seems to be in its favor. The improvements which have been made during the last decade in the sterilization of catgut and other absorbable animal sutures have contributed much in establishing and maintaining the confidence of surgeons in their use. There can be very little doubt that catgut will eventually render silk and metal obsolete as materials for buried sutures.

Nature abhors foreign material of all kinds in the living tissues. The ideal material for ligatures and sutures is one that is removable by absorption after it has accomplished the mechanical purposes for which it was employed. During my four months' tour through Europe and the Orient last summer I visited nearly a hundred hospitals and made special inquiries into the kind of suture material in use and the method of its preparation. Some surgeons relied on silk entirely, others used silk and catgut, and the smallest number relied on catgut exclusively. The methods of catgut sterilization were also found greatly at variance, as well as the manner of its preservation. The methods of Von Bergmann, Saul and Elsberg appeared to be most popular. The very fact that so many different methods of sterilization are still in vogue is the very best and most convincing proof that none of these have proved entirely satisfactory. The ideal sterilization of catgut consists in rendering the material not only absolutely sterile, but also mildly antiseptic without impairing its tensile strength and without destroying its durability on the one hand and interfering with its absorbability on the other.

The most recent method of catgut preparation is the one devised by Claudius.¹ The method consists in iodization of the raw material. The investigations made under the direction of his chief, Professor Bloch, were continued for more than a year, and every step taken was supervised by bacteriologic examinations. It was found that a 1 per cent. aqueous solution of iodine destroys the spores of the anthrax bacillus in eight days. The many experiments made by Claudius demonstrated

that it requires seven days for the complete sterilization of catgut in this solution. He also ascertained that the iodized catgut is not only absolutely sterile, but at the same time strongly antiseptic. Imbedded in a solid nutrient medium infected with pyogenic microbes the iodine contained in the catgut inhibited the growth of germs some distance from the threads.

The following directions for the iodization are given: The commercial, raw catgut without any preliminary preparation is wound on a glass roll, two strings tied together to each roll. The disinfection is effected by immersion in a 1 per cent. solution of iodine. The solution is made by dissolving one part of iodine and one part of potassic iodide in one hundred parts of water. The solution is prepared by dissolving the potassic iodide in a small quantity of water, to which the iodine, finely powdered, is added and the concentrated solution is then diluted to 1 per cent. The solution and catgut are kept in a bottle with a wide mouth, which is closed with an accurately-fitting glass stopper. The date is written on the label of the bottle. After eight days the catgut is ready for use and is preserved in the same bottle and same solution. Before using the catgut it is immersed on the glass roll in a 3 per cent. solution of carbolic acid or an indifferent sterile fluid for the purpose of removing the iodine from the surface of the threads. The threads are cut in the carbolic acid solution as they are needed. The catgut not used during the operation is returned into the bottle, thus doing away with any unnecessary waste of material. Catgut thus prepared is pitch black, soft, pliable and almost as strong as silk. The knots are firm and not liable to slip.

According to the size of the catgut its removal by absorption takes place in from twelve to sixteen days, being a little more durable than alcohol catgut. It does not irritate the tissues, as the free iodine is soon converted into potassic and sodic iodide by chemical combinations formed with the salts of the tissue fluids.

The iodized catgut has been given an extensive practical test in the Frederick's Hospital, Copenhagen, and has been found eminently reliable. The ease of its preparation, the quality of the product, the results of bacteriologic investigations and what has been ascertained of its practical utility are sufficient inducements to give it a prompt and fair trial in practice. Since 1896 I have relied² exclusively on catgut sterilized by Hofmeister's method, but instead of preserving it in an alcoholic solution of bichloride, I keep it ready for use in the following mixture: Absolute alcohol 950, glycerin 50, iodoform (finely pulverized) 100. The alcohol dissolves part of the iodoform. The catgut can be kept in this

1. M. Claudius: Eine Methode zur Sterilisation und sterile Aufhebung von Katgut. Deutsche Zeitschrift für Chirurgie, Band Lxlv, s. 489.

2. Ideal Catgut Sterilization. THE JOURNAL A. M. A., Dec. 12, 1896.

mixture for any length of time without losing its strength and without becoming brittle. In a very short time the color of the catgut becomes darker, and eventually pitch black. I always preferred old catgut to the recently prepared material, and have therefore been using iodized catgut for more than six years. I have used it to the exclusion of any other kind of catgut in the St. Joseph's Hospital, Presbyterian Hospital and the Surgical Clinic of Rush Medical College. Infection that could be traced to the catgut has been extremely rare. During the autumn quarter of Rush Medical College recently terminated only one case of deep-stitch abscess occurred. This was a case of large ventral hernia. Sutures of silver wire and catgut were employed in closing the parietal defect. It is more than probable that the catgut was contaminated after it was removed from the bottle.

With such uniform satisfactory results it was not without some hesitation that I abandoned the well-tried material for something new. I did so largely on account of the conviction I held that I had practically been using iodized catgut, and that I attributed the excellent results largely to the presence of iodoform and iodine in the material employed. In the paper in which I advocated sterilization of catgut by Hofmeister's method and its preservation in glycerin emulsion I stated:

Catgut to be safe should not only be absolutely sterile but should contain a sufficient quantity of an efficient antiseptic to render it unfit as a culture medium for pathogenic microbes. Most of the preserving solutions contain either corrosive sublimate or carbolic acid. Both of these antiseptics unduly irritate the tissues and increase the primary wound secretion, effects which can not fail in interfering, to a certain extent, with an ideal healing of a wound by primary intention. The interesting experiments made by Lauenstein leave no doubt that it is almost next to impossible to render the field of operation absolutely aseptic by any of our present methods of disinfection. We are forced to admit that nearly every wound inflicted by the surgeon's knife contains some pathogenic microbes, notwithstanding that the strictest aseptic precautions may have been practiced. The experiments made by Ewald have also furnished positive proof that sterile catgut often contains a sufficient quantity of an unknown toxic substance which, by its destructive action upon the cells engaged in the reparative process, transforms them into pus corpuscles, resulting in the production of a limited aseptic suppuration and the formation of sterile pus. Undoubtedly many of the stitch abscesses which occur in the practice of painstaking aseptic surgeons have such an origin.

These experimental researches force on us the conclusion that catgut should not only be properly sterilized, but that it must be made sufficiently antiseptic to at least inhibit the growth, if not destroy the pyogenic microbes which enter the wound during the operation or which may reach it later through the circulation.

The investigations of Claudius have confirmed me in the belief that the iodine in the catgut is of far-reaching value in the prevention of stitch abscesses. The iodine suffices not only in effecting sterilization, but at the same time imparts to the catgut the necessary antiseptic qualities. The iodized catgut behaves in the living tissues like in the infected nutrient medium by inhibiting the growth of pyogenic microbes in its substance and immediate environment.

Iodine possesses marked antiseptic properties, as first shown by Liebig. Fibrin immersed in iodized water does not undergo putrefaction. Putrefaction in pus can be prevented and arrested by the addition of iodine. The addition of a few drops of iodine to fetid pus causes the odor to disappear promptly. The antiseptic properties

of weak solutions of iodine in the treatment of suppurating wounds are very manifest. Iodine penetrates tissues, dead and living, quickly and deeply, its power of diffusion is great, qualities which, combined with its pronounced antiseptic properties, must entitle it to be considered the most desirable substance among the chemical agents employed for the sterilization and preservation of catgut.

We have used the iodized catgut prepared according to the directions of Claudius for a number of weeks in the surgical clinic of Rush Medical College, and the results so far have been entirely satisfactory. The raw material prepared in this country has been found more suitable for this method of sterilization than imported catgut from different sources. Some of the imported catgut was made brittle by immersion in the iodine solution the requisite length of time. If a large experience establishes the reliability of iodized catgut, then the method of catgut sterilization has been discovered which will recommend itself on account of its simplicity, more especially to the country practitioner and military surgeon. Experiments are now in progress in the surgical laboratory of Rush Medical College to determine the bactericidal power of iodine, and the results obtained will appear in a future communication.

THE ADMINISTRATION OF CALCIUM SALTS IN NEPHROLITHIASIS DUE TO URIC ACID CALCULI.

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THE UNDERLYING FACTS AND PRINCIPLES.

Phosphoric acid forms three salts with sodium, as follows:

H_3PO_4 , phosphoric acid.

NaH_2PO_4 , mono-sodium-phosphate.

Na_2HPO_4 , di-sodium-phosphate.

Na_3PO_4 , tri-sodium-phosphate.

The mono- and the di-sodium phosphate normally occur in the urine. Uric acid is readily soluble in di-sodium phosphate, but it is not soluble in mono-sodium phosphate. The addition, in fact, of mono-sodium phosphate to a solution of uric acid in di-sodium phosphate will cause the precipitation of the uric acid.

It is clear, therefore, that the solubility of uric acid in the urine is enhanced by the presence of di-sodium phosphate and that the tendency to the formation of uric acid concretions increases in proportion to the amount of mono-sodium phosphate that is excreted through the kidneys.

It is also clear that any endeavor directed toward preventing the precipitation of uric acid in the urinary passages must be concerned with increasing the amount of di-sodium phosphate and decreasing the amount of mono-sodium phosphate.

The ideal would be to cause the complete disappearance from the urine of mono-phosphate and at the same time to produce the elimination through the kidneys of a quantity of di-phosphate sufficiently large to hold all the uric acid excreted in solution.

This can be done in two ways, viz., either, *First*, by decreasing the phosphoric acid in the blood entering the kidneys, or *Second*, by increasing the sodium in this blood; for the smaller the proportion of available acid to available base the greater the tendency to the formation of basic salts.

First. The decrease of phosphoric acid in the renal blood. The phosphoric acid of the blood is derived from three sources. First, phosphoric acid in the form of phosphates is ingested with the food. Second, phosphorus is contained in all albumins (chiefly the nucleins of the food): the oxidation processes going on in the organism convert this phosphorus into phosphoric acid. Third, phosphoric acid is similarly derived from the albumins (nucleins) of our own tissues. The phosphoric acid formed in the body is consequently derived both from the disassimilation of the food proteins and the catabolism of the proper tissues of the body.

The first two sources of phosphoric acid we can control directly by eliminating from the diet pabulum containing much phosphorus, as nuclein-containing foods, e. g., internal organs, young germinating plants, etc. (By limiting the ingestion of nuclein-containing foods we at the same time eliminate the chief source of uric acid.)

The third source of phosphoric acid we can only control indirectly, i. e., by removing from the blood and tissues, through other channels than the kidneys, the phosphoric acid that must inevitably be formed from the degradation of our own tissues.

Both the direct and indirect regulation of the phosphoric acid content of the blood can be achieved by the administration of calcium salts. For, in the first place, calcium forms insoluble salts with the alkaline phosphates contained in our normal food, and in this way prevents the absorption of this moiety into the blood. In the second place, calcium, owing to the great affinity it possesses for phosphoric acid, combines with the phosphoric acid encountered in the blood stream, and this proportion is subsequently eliminated in the form of calcium phosphate—not, however, through the kidneys, but in great part through the intestine. This is an important point, for in contradistinction to sodium, potassium and magnesium, all elements that are chiefly eliminated through the kidneys, calcium is principally (85 to 95 per cent.) eliminated through the bowel.

It will be seen, therefore, that calcium given by mouth can, first, prevent the entrance of preformed phosphoric acid (phosphates) from the food into the blood, and can, secondly, prevent the phosphoric acid formed in the organism from passing into the urine by causing its elimination through the intestine.

Second. The increase of the sodium in the renal blood. This object can be accomplished by the administration of sodium salts by mouth; but this is bad practice. It is dangerous for various reasons to render the urine continuously alkaline. And this occurs if doses of sodium salts are exhibited large enough to convert all the mono-phosphate of the urine into di-phosphate. Normal urine is faintly acid, and it should be kept so. Calcium salts given in very large doses never render the urine alkaline.

Whereas, therefore, the administration of large doses of sodium salts for long periods of time may be indicated on theoretical grounds, it is counter-indicated on empirical grounds. First, because it renders the urine alkaline and thus favors the deposit of concretions other than uric acid stones; second, because it exercises a deleterious effect on gastric digestion; third, because it is not without effect on the corpuscular elements of the blood; fourth, because it is superfluous, as calcium salts by decreasing the phosphoric acid of the urine thereby cause a relative increase of the sodium (and of the sodium di-phosphate) without at the same time rendering the urine alkaline.

To summarize, therefore:

1. The uric acid of the urine is held in solution by di-sodium phosphate and is precipitated (salted out) by mono-sodium phosphate.

2. For the prevention of uratic calculi the increase of di-phosphate and the decrease of mono-phosphate is, therefore, a desideratum. This object can be accomplished either by decreasing the phosphoric acid or by increasing the sodium of the urine.

3. Calcium salts produce the desired effect by decreasing the excretion of phosphoric acid through the kidneys.

a By binding the preformed phosphates of the food and preventing their absorption.

b By binding the phosphates of the blood and causing their elimination through the bowel.

4. The administration of sodium salts that can also produce an increase of the di-phosphate and a corresponding decrease of the mono-phosphate is to be condemned, chiefly because sufficiently large doses render the urine permanently alkaline. And this deleterious effect is not produced by the exhibition of calcium salts.

DOSE AND ADMINISTRATION.

The best calcium preparation is the carbonate; this may be given in doses of fifteen to twenty grains three times a day. More may be given with impunity. Von Noorden advises as much as fifteen grams a day, and claims never to have seen any bad effects even after months of this treatment. It is necessary to individualize—the smallest efficient quantity of any drug is always the best dose. The urinary calcium, phosphorus and uric acid excretion should be determined in the beginning (the patient being on a fairly constant, nuclein-free diet) and the dosage regulated accordingly.

A more convenient form of administering calcium and one that is preferred by most patients, particularly if the treatment is to be carried out indefinitely, is to give calcium in the form of natural mineral waters or as an addition to some pure water. Among the better known European mineral waters Contrexéville, Wildungen and Fachingen contain the largest proportion of calcium salts. Among domestic waters the choice is difficult. The exploiters of the majority of them make such blatant and extravagant claims in regard to wonder cures that it is not safe to place any reliance on this essentially commercial propaganda. Personally, I prefer adding the necessary amount of calcium salt or lime water to some pure water; for the "curative" value of most natural and artificial mineral waters depends more on the water than on the salts they incorporate. Abundant water drinking is in itself indicated in urolithiasis, as any dilution of the urine must needs counteract the tendency to urate concretions. That the diet should in addition be so regulated as to lead to the smallest possible excretion of uric acid need hardly be emphasized.¹

THE DIAGNOSIS OF URIC ACID CALCULI.

It is important to determine that the calculi or the "gravel" passed are really composed of uric acid or urates and not of other possible substances. The following method is rapid and easy of execution.

The concretions are finely powdered. A portion is treated with dilute cold hydrochloric acid in a test tube; if effervescence occurs the concretion contains carbonates, and if it dissolves it is not a uric acid stone. If

1. See my article on "The Modern Basis of Dietetic Treatment in the Uric Acid Diathesis," N. Y. Med. Jour., Nov. 1, 1902.

nothing or only very little of the material goes into solution, the residue is treated with a large quantity of warm dilute HCl. Any residue is presumably uric acid for the sulphates and oxalates of lime, the phosphates, cystin and xanthin all go into solution. The residue is filtered off, dried and heated on a piece of platinum foil; a distinct odor of bitter almonds (HCN) speaks for uric acid. Finally, the murexid test may be performed as follows, in order to render the diagnosis certain. A small quantity of the material is dissolved in nitric acid and a few drops of the solution evaporated in a porcelain dish; the residue should be red—it should turn purple when touched with a drop of ammonia, and reddish-blue with a drop of potassium- or sodium-hydrate.

RESULTS.

I report four cases; they present no clinical features of sufficient intrinsic interest to merit chronicling in detail. The only noticeable fact is that all four were advised by me several years ago to use calcium salts continuously; that all four were lost sight of for periods varying from two and a half to four years, and that all four recently again came under observation for other causes without having suffered a recurrence of their attacks of renal colic during the whole intervening time. Several other cases I have lost track of, but hope to rediscover.

Von Noorden, who first advocated the use of calcium salts in nephrolithiasis, reports only two occurrences of renal colic among twenty-one cases; in one patient an attack occurred a few days after beginning the treatment; in another patient who had suffered from severe attacks every few weeks, an attack developed nine months after the treatment was begun, and not again thereafter.

The good results obtained in my four cases and the statistics of Von Noorden lead me to believe that the treatment of uratic nephrolithiasis by the continuous exhibition of calcium salts is efficacious and deserving of extended trial.

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GLIOMA RETINÆ WITH REPORT OF FIVE CASES.*

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Glioma is a disease limited to childhood, and we may consider it the only true neoplasm developing in the retina. Its synonyms are: "Neuro-epithelioma" (Wintersteiner), "gliosarcoma" (Virchow), "glio-angiosarcoma" and "tubular gliosarcoma" (De Gama Pinto).

H. Knapp, in 1867, appears to have been the first to give an accurate and thoroughly scientific description of this class of tumors. In 1868 appeared Hirschberg's classical work on this subject, with a report of 77 cases collected from different sources. Virchow believed the cells of this class of tumors to be derived from the supporting fibers of the retina (the glia), and hence gave it the name of glioma retinæ.

Iwanhoff, in 1869, described the structure of the glioma as follows: "The larger nodules are always very vascular, with a characteristic arrangement of the cells which are concentrically grouped around the blood vessels. On section the whole nodule appears to consist

of closely arranged cell rings whose central spaces are filled with red blood corpuscles."

Wintersteiner has tabulated 500 cases from all sources, 31 of these being his own, which had been very thoroughly studied microscopically. The same author has tabulated the following cases, in which the origin of the gliomatous growth could positively be traced to one or more of the retinal layers with the following results:

(a) Origin in layer of optic nerve fibers.....	5 cases
Origin in inner nuclear layer.....	19 cases
Origin in any of the inner layers of retina.....	12 cases
Total.....	36 cases
(b) Origin in outer nuclear layer.....	9 cases
Origin in outer layers of retina.....	3 cases
Total.....	12 cases

From this we will observe that the origin is three times more frequent in the inner than in the outer layers. We must remember that the origin is not limited to one layer of the retina, but may spring from several layers in the same case. It has been observed that gliomata have their origin four times more frequently from the posterior than from the anterior half of the globe. The same author accepts Cohnheim's theory that tumors have their origin in the masses of embryonic cells which are at times left over in the building of the normal structure, these cells remaining dormant in their embryonic state until at some later period they may take on an active and perverted growth. Prof. Schöbl, who has observed a very large number of this class of tumors, concludes that glioma may start from the supporting fibers of any of the layers of the retina, but mostly from the inner nuclear layer. In this layer Da Gama Pinto found that the nuclei were mostly in process of division with karyokinetic figures. That glioma is a form of tumor independent of and different from sarcoma, was first doubted by Cornil and Ranvier; later they were termed small round-celled sarcomata by Delafield, and Nagel agreed in this opinion. From Virchow's standpoint the supporting tissue of the retina can not be considered identical with common connective tissue, and from the standpoint of Klebs the gliomata are derived even from a different germinal layer than that from which the sarcomata arise. The clinical picture of glioma also is so well defined that to confound it with sarcoma is against good judgment.

Becker thinks that there is a sufficient number of mesoderm cells in the blood cells to give rise to sarcomata. To this it must be answered that their origin from the granules of the nuclear layer directly, especially of the inner one, can be observed, and that processes of division can be seen there, as Da Gama Pinto, Schöbl and others have witnessed, and that not a single observer has found a glioma starting from a retinal blood vessel, while with sarcomata this is nothing rare.

The most frequent mixed tumor of this kind is gliosarcoma (Virchow). When spreading into the choroid and sclera and beyond the eye, gliomata may sometimes change their character in that their cells grow larger, up to 15 microns, while their nuclei remain comparatively small—6 to 10 microns; that is, the protoplasm is increased, or, in other words, the cells assume the character of small round-celled sarcoma. Berthold was the first who asserted that gliomata may assume a sarcomatous character, after having spread into the choroid, and that this membrane, irritated by the entering of the glioma cells, furnishes the sarcomatous elements. In a reverse way it may occur that sarcomata of the choroid take on a gliomatous character. This, perhaps, explains Von Graefe's two observations of gliomas in adults.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

Prof. Schöbl's remarkable case of glio-fibro-sarcomyo-angioma confirms the statement that the character of the tumor often depends on whether or not it has invaded other tissues. In this case, the pure retinal glioma, when it spread into the sclera, produced proliferation with the formation of glio-fibroma; when the glioma cells spread into the orbital tissue they caused a proliferation in this locality, and sarcomatous (round and later spindle) cells were formed; and thus a glio-fibro-sarcoma resulted. The same process was repeated with the unstriped muscular tissue of the blood vessels, and thus the tumor formed a glio-fibro-sarcomyo-angioma.

Greef has examined fresh gliomata by the impregnation methods of Golgi and Cajal. By the latter method he succeeded in demonstrating the presence of differently shaped cells in retinal glioma. He found numerous oval and star-shaped cells with free offshoots which were undoubtedly true neuroglia cells and the original cells of the tumor. From Greef's investigations, it appears certain that gliomata are not neoplasms of sarcomatous nature, since impregnation of the cells after Cajal's method could not take place. It is believed by some authors that neuro-epithelioma of the retina is always congenital, or at least that a predisposition exists through some disturbance in the process of development.

Glioma spreads in the retinal structure: 1, by enlargement of a single or the confluence of several smaller nodules, and 2, by metastasis within the retina.

The growth of the primary nodules takes place through division and multiplication of the cells next to the blood-vessels, whereby the older cells are constantly crowded farther back toward the periphery and become necrotic for want of nutrition.

The growth spreads in three ways: 1, through the inter-lamellar spaces; 2, through the lymph channels, and 3, through the blood-vessels.

It is characteristic of the development of glioma that the growth not alone displaces other structures by pressure but replaces them by neoplastic tissue. With the destruction and transformation of the retina by the rapidly developing gliomatous tissue come retinal detachment and an extension of the process to other structures, the choroid being generally and naturally the first to be involved. Beyond the retina and the choroid the extension of the neuro-epithelioma takes place most readily along the optic nerve, the cancer tissue replacing the nerve bundles and finally extending to and involving the chiasm and surrounding structures. Secondary tumors have been found in nearly all of the organs and even the bony structures are frequently involved.

In the second and third stages the growth replaces the orbital tissue, extending to and destroying the perosteum and bone by erosion.

The diagnosis between gliomata and other tumors is easily made, but the differentiation of the pseudo-glioma is fraught with many difficulties, but only when the disease is well advanced. We must differentiate from: 1, detachment or cysts of the retina; 2, tumors of the choroid and ciliary region; 3, masses of inflammatory exudate in the vitreous (pseudo-glioma), and 4, the combination of true glioma with any of the above.

The greatest difficulty in making a correct diagnosis occurs when the cornea, aqueous or lens have undergone such changes as to prevent inspection of the interior of the globe, cataract being the most frequent condition encountered. As a rule, we may state that inflammatory exudates into the vitreous give a yellowish reflex, with a

metallic luster and smooth surface, while the color of glioma may be a light yellow, reddish or greenish-yellow and the growth is nodular.

The diagnosis may be complicated further by the formation of a post-inflammatory membrane or exudate upon the hyaloid membrane directly behind the lens, by chronic inflammation and fibrinous exudate into the vitreous, or by acute suppurative hyalitis. From detachment of the retina it should be readily differentiated by a careful ophthalmoscopic examination, and from tumors of the choroid by the fact that they are nearly all pigmented. Leucosarcoma of the choroid is rare and its growth is dissimilar to that of gliomata. It develops as a solitary half-round mass over which the retina may be atrophied, but does not form reduplications and thickened masses.

That there is often great difficulty in making a differential diagnosis between the true and the pseudo-glioma, is proved by the fact that Raab found in the collection of Otto Becker of Heidelberg twenty eyes that had been enucleated by various expert diagnosticians, after the diagnosis of glioma retinae had been made, and yet in 25 per cent. of these no gliomatous or cancerous tissue was present, but only inflammatory changes in the uveal tract. Treacher-Collins reports that out of 1020 eyes removed in Moorfield Hospital, London, from 1888 to 1892, the diagnosis of glioma had been made in 24 cases, and yet microscopic examination revealed that 7 of these were pseudo-glioma.

Fortunately, neuro-epithelioma of the retina is rare. Even in the largest clinics, six months to a year may pass without a child with glioma being presented. Twenty-two of the great clinics of the world reporting 498,057 patients, record 203 cases of glioma—one twenty-fifth of 1 per cent.—or one case of glioma out of every 2500 cases of diseases of the eye. But after reading the reports of Raab and Treacher-Collins, mentioned above, we are justified in concluding that no doubt many of these were cases of pseudo-glioma.

The disease is absolutely limited to childhood and is often well advanced at birth. The combined results of investigation by leading oculists of the world seem to prove conclusively that when glioma is reported as a primary growth in an individual over 16 years of age it is a mistaken diagnosis. Out of 467 cases, the growth was developed at birth in 34 cases to such an extent as to present the amaurotic cat's eye. Ophthalmoscopic examination would have shown a much larger number. Including these congenital cases, there developed during the first three years of life, 314 out of a total of 467 cases, or 67 per cent.

The percentage of involvement of both eyes is very large; out of 87 cases it occurred 16 times at birth, or in 18.4 per cent. Deducting these congenital cases from the 87 cases, it was found that both eyes were involved 65 times out of 71 cases during the first three years of life.

It is of interest to remember that the second eye appears never to have been found to become involved by an extension of the disease along the optic nerve and through the chiasm from the first eye. Where both eyes are affected, the disease always develops independently in each eye.

The disease may extend backward along the optic nerve to the chiasm, involving adjacent structures and causing death, but it has not been known to travel from the chiasm peripherally along the nerve of the sound eye; blindness of the non-affected eye due to atrophy may, however, result because of the destruction of the nerve fibers in the chiasm.

The influence of heredity has not been demonstrated; as yet we know of no case in which an individual who had an eye removed in childhood for glioma, has transmitted the disease to his offspring. There are, however, many cases on record where several members of one family have been affected, just as at times we find congenital cataract in some or all of the children of one family, where the parents are closely related. I have been unable to find whether there was consanguinity between the parents of the patients about to be cited.

Lerche, St. Petersburg, 1821, observed a family of 7 children, 4 of whom died from glioma; Sichel, in 1852, 4 cases in one family; Calderini, in 1867, 3 cases in one family; Knapp and Thompson, in 1874, 5 cases in one family; MacGregor, in 1885, 3 cases in one family, and Flexner, in 1871, 3 cases in one family. Wilson, in 1872, exhibited before the Pathological Society of Dublin, the photographs of 8 children of one family, four of whom had died from glioma and the remaining four being also afflicted with the same disease.

The disease may be divided into three stages of development:

1. Period of intra-ocular growth, without increased tension or inflammatory symptoms.
2. Glaucomatous or inflammatory period, which ends with rupture of the globe.
3. The period of extra-ocular growth and metastasis.

In some cases there is temporary arrest and even retrograde change, such as phthisis bulbi after rupture or violent inflammatory reaction of the globe, the temporary arrest being probably due to destruction of the vessels of nutrition with degeneration of the glioma cells as a result of the suppurative process.

Death may result from:

1. Involvement of the brain.
2. Cachexia.
3. Pressure of the growth on the medulla oblongata.
4. Suffocation from extension of growth into the pharynx and larynx.

5. Pyemia or septicemia, with metastatic abscesses.

The duration of life when there is no surgical interference varies greatly, but from a few months to three years is the average. A few cases have been reported where the first period lasted five years from the time the disease was first discovered. The average duration of the second stage is from 2 to 21 months, while the third stage from the rupture of the cornea to the fatal termination is the shortest, varying from two weeks to one year, with an average of three months.

If there is no return in two years after enucleation the case may be regarded as cured so far as that side is concerned, but we must remember that the disease may occur in the other eye a considerable period after the first eye becomes affected, and we must then regard it as an independent attack in the same patient and not a recurrence of the primary growth.

The only treatment that can be considered as offering any chance of saving life is removal of the affected eye, with as much as possible of the optic nerve, at the earliest possible moment during the first stage. In operations undertaken during the second stage, before the rupture of the cornea, the chances of success are very slight, since the infection has often extended outside of the globe through the veins or lymph channels. But even then it is our duty to operate, and exenteration of the orbit should be added to the enucleation of the eye, if we hope to arrest the disease. In this stage I regard the use of pastes far superior to the use of cutting instru-

ments, because the liability of opening up new avenues of infection is much greater in the latter method.

When the case has once entered the third stage the rule is that, no matter how thoroughly exenteration is performed, there is always recurrence within a few weeks, and operation in this stage is only justifiable in order to afford temporary relief.

With the advent of serum-therapy it was hoped that this mode of treatment might be of service, and Nieden reported his observations upon this method at the meeting of the Ophthalmological Society at Heidelberg in 1896. The cancer serum was injected in a case of recurrent glioma. At first there appeared to be an arrest of the growth, but it soon broke forth with greater fury than before, and went on speedily to a fatal termination.

Shall we advise enucleation if both eyes are affected? Since cases of undoubted glioma—as proved by the microscope—have been cured after double enucleation, and as the disease springs from a separate and independent focus in each eye, we should answer this question in the affirmative, and urge the operation if the disease has not progressed beyond the first or second stage in either eye. For if life is saved, blindness to a child at this period is not a barrier to its acquiring an education and becoming a useful and independent citizen.

CASE 1.—Baby M., female, white, aged 2 years, was first seen by me Feb. 7, 1894. Child was well-nourished and its general health good. Left eye normal; right pupil dilated, which caused the mother to seek consultation. External appearance of globe normal. The pupil appeared the normal black color. Tension normal. Ophthalmoscopic examination revealed that the dioptric media was clear, but there was a flat, yellowish, nodular mass to the outer side of disc; retina was intact outside of the affected area. A diagnosis of glioma retinae was made, immediate enucleation advised, and the danger of delay fully explained to the mother. The family physician was informed of my opinion. He examined the eye superficially and said he could see nothing wrong, advised against the operation, and gave the mother little sugar-pills for the child.

May 3, nearly three months later, the mother returned with the child. It was emaciated, exhausted and fretful, frequently crying out in pain. The case was now well advanced into the second stage. Globe injected, tension +2, anterior chamber obliterated, pupillary area filled with a yellowish mass, slightly irregular, with a few fine vessels seen upon the surface. The family physician had now withdrawn his objection to operation. Left eye was still normal.

In order to give the child its only chance, and to relieve the suffering caused by the glaucomatous eye, I enucleated the globe and also removed a considerable piece of the optic nerve. Under similar conditions I should now make exenteration of the orbit. The operation was followed by marked improvement in the child's general condition, but on October 8, about five months after the operation, the mother returned with the child stating that it had vomited frequently during the previous week. Its appetite was poor, but it slept well. No other general symptoms were present. The orbital cavity was filled with a hard mass which did not appear to be attached to the bony walls, but was movable; the new growth appeared to spring from the optic nerve-end, which formed its pedicle. The tumor was removed to the very apex of the orbit and, as surmised, it sprang from that part of the optic nerve which had not been removed at the first operation. As I considered the case beyond hope, I did not wish to cause the child additional and useless suffering by the use of cautery or pastes.

The growth promptly recurred and soon developed into a large protruding mass. The child suffered most terrible agonies unless kept under the influence of opiates, 1½ grs. of morphia being administered hypodermatically every 4 or 6 hours.

The child died on Feb. 20, 1895. (Figs. 1 and 2 are sketches made after death, showing the appearance of the growth.)

Postmortem Notes.—Child greatly emaciated. Tumor 12 inches in circumference at the base, projecting from the right orbit about 4 inches. In shape, the tumor had much the appearance of a small cocoanut, and it was of a dark reddish color. The projecting surface was broken down in places and covered with nodules. The growth involved the bony structure and extended from the roots of the hair almost to the alveolar process. The meninges at the base of the right side and a portion of the brain, together with the optic nerve, were extensively invaded by the cancerous tissue which was partly ne-

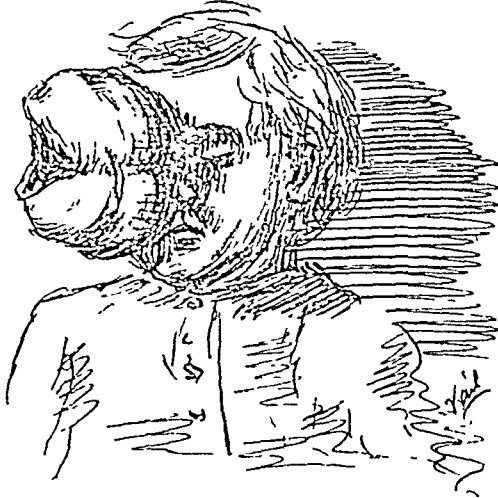


Fig. 1.—Case 1. Recurrent growth one year after neoplasm was first discovered ophthalmoscopically. Nine months after enucleation and five months after removing recurrent growth and all of optic nerve to apex of orbit.

crotic. The meninges and brain of the left side, together with the left eye, appeared normal.

Microscopic Report of Globe.—Dr. Louis Stricker reports as follows: Unfortunately, the eye was cut through the equatorial region; hence, no complete sections of the entire globe could be made. Both halves were filled with a new growth, showing on its surface minute red spots—large ves-



Fig. 2.—Side view of Fig. 1

sels—and around these areas of a greenish color, whereas, at a distance from these the surface was white. The general contour of the globe was retained and at no point had the tumor perforated the sclera. The optic nerve, especially its nasal half, showed decided thickening. The anterior half of the globe was also filled with the tumor mass, and entirely hid from view the lens and ciliary body.

The specimen was carefully hardened in Mueller's fluid for 5 months, then washed out and gradually hardened in alcohol, finally imbedded in celloidin, and then cut in sections.

Without the use of a lens, the sections disclose that the optic nerve is infiltrated with the tumor up to the point of excision, necessarily having left behind some part of the new growth.

A general view of a section of the globe discloses a complete obliteration of the retina, not a vestige of its anatomic structure remaining, except here and there a few retinal pigment cells—a most widespread involvement of the choroid, which in many places is thickened to many times its normal size, and likewise, a complete involvement of the optic nerve, with total obliteration of nerve fibers.

All the sections disclosed a very marked involvement of the choroid. Anteriorly, for a very short distance, the choroid was found normal, but as it was followed around toward the optic nerve, its involvement in the tumor mass at once became apparent, and nodules begin to appear, until large areas are encountered completely infiltrated with round cells containing large nuclei. The stroma pigment cells of the choroid have entirely disappeared, but the vitreous lamella is in many places sharply outlined, giving the line of separation from the retina. In some places, however, the vitreous lamella has been eroded, and thus a point either of entrance or exit has been given for the tumor to invade this space between the choroid and the retinal layer of pigment cells which here and there exist and act as a barrier to invasion. At one point in the tumor the continuity of this vitreous lamella is broken, and here a distinct point of communication between choroid and interior of globe exists. In one section was found an enormous vessel extending directly from the choroid out into the tumor mass. The retinal detachment extended as far as the ora serrata, at this point the cystic degenerated retina can be followed forward for a short space, to be entirely obliterated in lobules of tumor.

The portions of the tumor confined strictly to the choroid are made up of round cells, which take the stain deeply, and to an equal degree, and though this is permeated by blood-vessels, they do not seem particularly more numerous or larger than usually encountered in the normal choroid. As soon, however, as the tumor is followed beyond the strict confines of the choroid, the vessels are much more numerous, widely dilated, some more than twice the size of the normal arteria centralis retinae, and filled with blood cells. Around each one of the vessels the round cells of the tumor are closely pressed together, so that they often take on a polyhedral shape. They take the stain very deeply, whereas, at a distance, much less so, so that the tumor has a peculiar spotted or lobulated appearance. Nowhere did I find places where the tumor cells formed the walls of the vessels, but everywhere there are large vessels with thickened and distinctive vessel walls, showing the endothelial cells lining the vessel wall, the intima of the vessel, and around these grouped the cells of the tumor.

The choroid is distinctly and sharply demarcated from the optic nerve by connective tissue fibers. The fibers of the lamina cribrosa are especially sharply defined and pushed backward by the tumor, which has encroached on the nerve head, and finally invaded and thoroughly destroyed its fibers. Nevertheless, the line of demarcation between the choroid and nerve head is very sharply defined. The optic nerve itself is greatly thickened, its nerve fibers being entirely obliterated by the extreme infiltration. Both artery and vein intensely dilated and filled with blood cells. To the side of the artery this tissue is one mass of round cells, and all along the nerve sheath are new-formed and widely dilated blood-vessels. The lymph space is obliterated, due in part to the infiltration and swelling of the nerve and in part to the infiltration of the arachnoidal sheath and space, and also of the dural sheath (Figs. 3 and 4). The side nearest the vein is likewise infiltrated with round cells, as is also its dural sheath. These conditions exist to the very end of the nerve. In some of the sections the arteria centralis retinae can be followed outward directly into the tumor mass, leaving no doubt that many of the large vessels permeating the tumor take their origin from the large central vessels.

The retina has been partly destroyed.

The sections of the anterior half of the globe (Fig. 5) show the retina detached to the ora serrata, from which point it was pushed anteriorly toward the lens, from both sides coming up close to the lens and then going backward toward the nerve head—a typical, total, umbrella detachment. In the triangular space between the lens and receding retinal framework are the connective tissue fibers of the vitreous. All the anterior sections of the choroid show this to be infiltrated. The ciliary body and its processes are atrophied, doubtless from pressure, and they likewise show slight infiltration.

The lens has not been affected and is perfectly normal, although the tumor mass with large blood-vessels is pressed

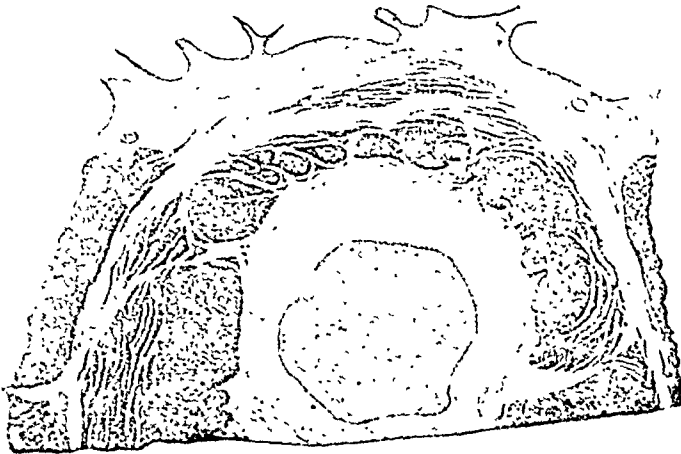


Fig. 3.—Section of optic nerve. The nerve fibers totally destroyed; also notice enormous thickening of the inner sheath, and infiltration of the subdural and subarachnoid spaces with the tumor mass. (After Wintersteiner.)

up against its posterior surface. The lens shows the peculiar bulged edges always found in cases of tumor in the eyeball. On one side the tumor cells have worked their way through Petit's canal into the posterior chamber and forced the iris forward on that side, so as to produce a wide curvature, and a deepening of the posterior chamber. Some of the cells have found their way into the filtrating angle of the anterior chamber, which is not occluded.

The iris is atrophic, and near its insertion shows some widely dilated vessels. The cornea is normal. The sclera

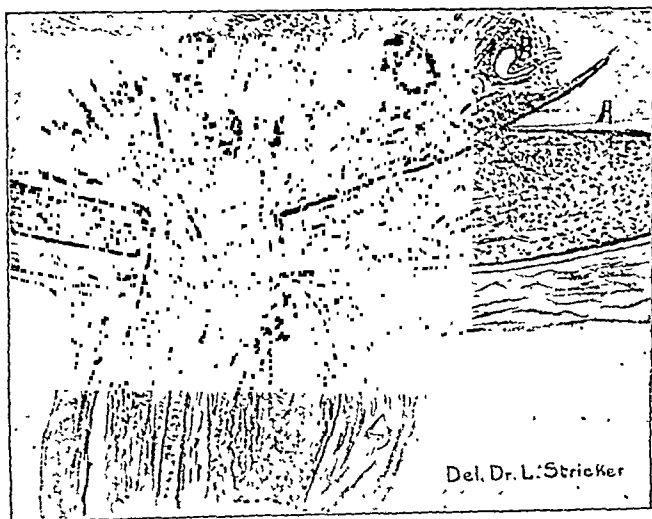


Fig. 4.—Case 1.—Showing new growth and infiltration of optic nerve.

is attenuated owing to long intra-ocular pressure. Posteriorly, near the optic nerve entrance, it is traversed by vessels showing a large increase of nuclei in their vicinity.

This tumor is exceedingly vascular, the large size of the vessels being a prominent factor. Part of the tumor seems to be strictly confined to the choroid, and by a pedicle extends inward into the vitreous space, which is completely filled by the tumor mass. The large mass occupying the vitreous space has a characteristic appearance on section of deeply-stained portions around the vessels, and is less stained at more remote points, this being a result of removal of por-

tions of the tumor from nutrition derived from the vessels. The growth of the tumor is likewise dependent on the growth of the vessels, around which the cells of the tumor arrange themselves, thus producing the alveolar or tubular form of tumor. The cells forming the tumor are all of the round-celled, non-pigmented variety.

The entire retina has been obliterated, save the cystic framework close to the ora serrata. That which originally—taking into consideration the age of the patient, 3 years—may have been a glioma, on spreading to the choroid—either by continuity of tissue or by direct introduction of cells of the tumor through the venous circulation—aroused this to excessive cellular activity, and so introduced the sarcomatous element which has completely masked the original picture, thus producing the glio-sarcoma of Virchow.

From this report the question might arise, whether or not this was a case of glioma, but the age of the patient, the rapidity of the growth, and above all, the early clinical picture, leave not the slightest doubt that the tumor primarily was a glioma, eventually assuming the sarcomatous type.*

Dr. H. J. Whitacre reported as follows upon the recurrent growth springing from the optic nerve: The structure is that of small round cells in definite connection with a fibrous intercellular substance. The blood vessels are poorly formed and pigment granules are



Fig. 5.—Section from anterior half of the globe, showing detached retina, atrophy of ciliary body and new growth pressing on the posterior surface of lens, which had remained perfectly transparent.

found in many parts. The tumor is a small round-celled sarcoma.

CASE 2.—Baby R. E., aged 5 months, was brought to me Dec. 29, 1897. The child was well developed and nourished. Three weeks ago the parents noticed that the pupil of the right eye was dilated, and had a "silvery appearance which made the eye look dull." Dr. W. F. Shepherd was consulted, and promptly referred the case for consultation. The globe was congested; T.=+I; cornea clear; anterior chamber obliterated; lens and iris in contact with cornea; pupillary space filled with a mass of a reddish gray color, the surface being unusually vascular, the disease having advanced to the second stage. The appearance of the growth when examined under a strong light, gives a peculiar reflex not unlike a fire opal. Ophthalmoscopic examination of the left eye under mydriasis was negative. The child was admitted to my hospital; the same day enucleation with extensive resection of the optic nerve performed, and the specimen given to Dr. H. J. Whitacre for microscopic examination. The following is his report:

The specimen received was a complete right eye, which was placed in a 4 per cent. solution of formol for four days, and the hardening completed in 95 per cent. alcohol.

* The report, however, shows how very important it is to pull the globe well forward when enucleating, and to cut the nerve at the very apex of the orbit so that if possible, we may extend beyond that part of the nerve which may be infiltrated with cancer cells. In this case I resected the nerve far back, but the disease had extended further. Still, by subjecting the nerve to extra stretching, I might have secured more.

A sagittal section of the hardened specimen presented the appearance shown by the photograph (Fig. 6), and demonstrates a globular tumor occupying mainly the temporal half of the vitreous chamber. Posteriorly, the nasal half shows a pedicle attached to the point of entrance of the optic nerve. Anteriorly, the tumor presses against the posterior surface of the lens, and on each side of the detached retina can be seen a thin membrane extending from the tumor to the choroid.

The tumor, when half hardened, was very soft, and must have been almost gelatinous in its fresh state. Sections of the tumor were made with difficulty because of the multiple



Fig. 6.—Case 2. Right eye, removed first. No recurrence three years and eight months afterwards.

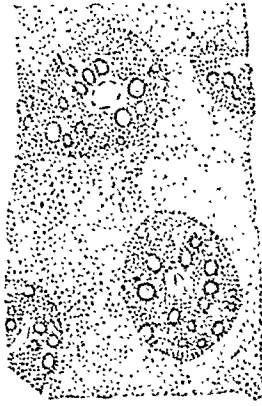


Fig. 7.—Neuroepithelial nests or "rosettes" surrounding a central blood vessel. (After Wintersteiner.)

points of calcareous degeneration which dulled the knife and tore the sections. In general arrangement the tumor is made up of bands and circles of cells arranged regularly about the central opening (Fig. 7). The appearance is that of a vascular tumor with the cells concentrically arranged around the central vessel.

By higher magnification the lumen of this central vessel looks like the acinus of a gland surrounded by high columnar

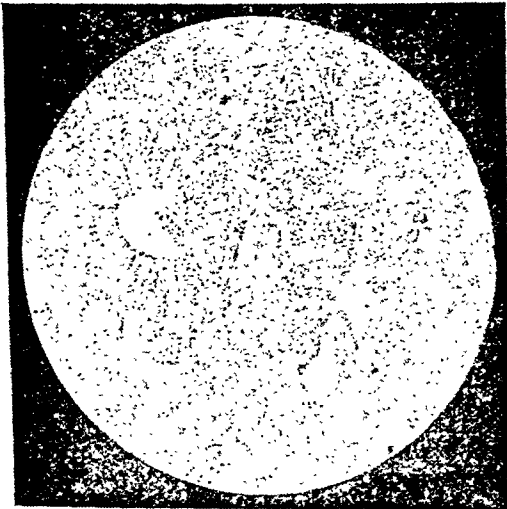


Fig. 8.—Photomicrograph showing the cells concentrically arranged around central vessels, forming "rosettes."

cells (Fig. 8); the other cells of the area have similar characteristics because of their origin by proliferation from these central cells. These central openings may be either lymph or blood-vessels, and it would be difficult to say which they are. Yet it would seem that they are blood-vessels because of the presence of blood cells within their lumen.

In Fig. 9 is shown a section of the optic nerve removed with the globe.

The manner in which the glioma developed from the inner-nuclear layer is beautifully demonstrated in Fig. 10, taken from

Case 2; and also shown in Fig. 11, copied from Wintersteiner; the relative size and location of this nodule is shown in Fig. 12. In this illustration we see three distinct gliomatous nodules in the totally detached retina; the one shown in Fig. 11 is seen as a minute pin-head swelling near the posterior surface of the lens. The second growth is in the upper and posterior

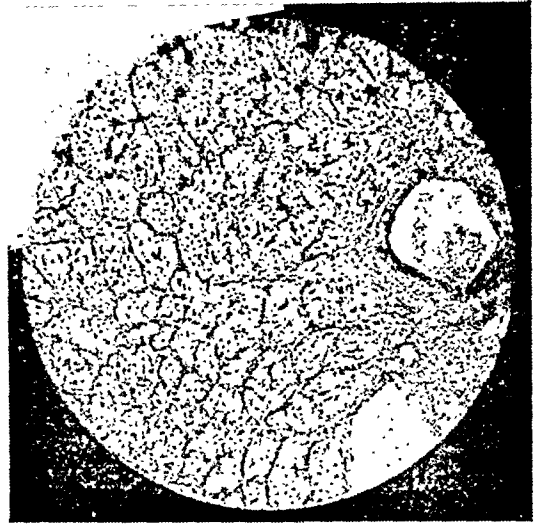


Fig. 9.—Case 2. Section of right optic nerve, removed with the globe. Nerve is normal, and there was no recurrence.

portion, in shape resembling the lens, but smaller. While nearly the whole lower half of the vitreous chamber is filled with the third nodule.

Re-examination.—April 26, 1898. The patient was re-examined and the following note is found in the record: "Right orbital cavity has healed perfectly; no evidence whatever of any return of the growth. Left Eye—Pupil, tension and general appearance, normal. Ophthalmoscopic examination negative." In January, 1900, I sent a communication to the

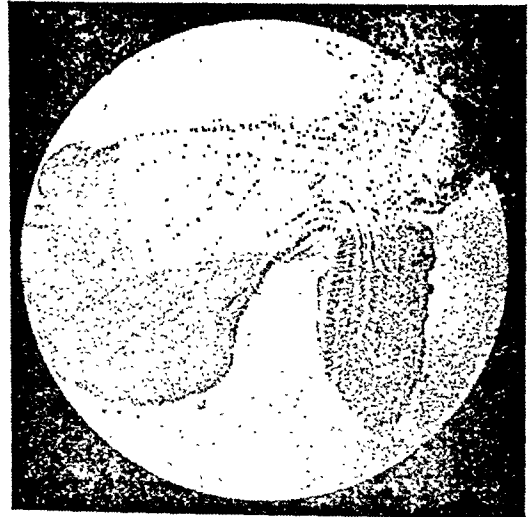


Fig. 10.—Glioma from right eye of Case 2, showing how the new growth sprang from the inner nuclear layer of retina.

parents asking if the child was still living and if so to bring it to the office, which they did February 7. Child in excellent physical condition; the right orbit from which the eye had been removed 2 years and 2 months before, was in perfect condition, the conjunctival sac smooth and pale. The left eye appeared normal; the pupil was dilated with a mydriatic, a careful ophthalmoscopic examination made, and the fundus found normal.

On March 7 the mother returned, bringing another child who had complained of its eyes, as she feared that a similar growth

might be developed in this child; this, however, proved not to be the case. I made another examination of the baby which she had brought with her and found to my great surprise that there was a small, whitish-yellow, irregular patch, appearing as a slight thickening of the retina, its edges not being sharply defined. It had an area of about one-half the diameter of the disc and was located outwards from the same about two diameters. The mother was told to bring the child again in one week, when it was found that the infiltration had

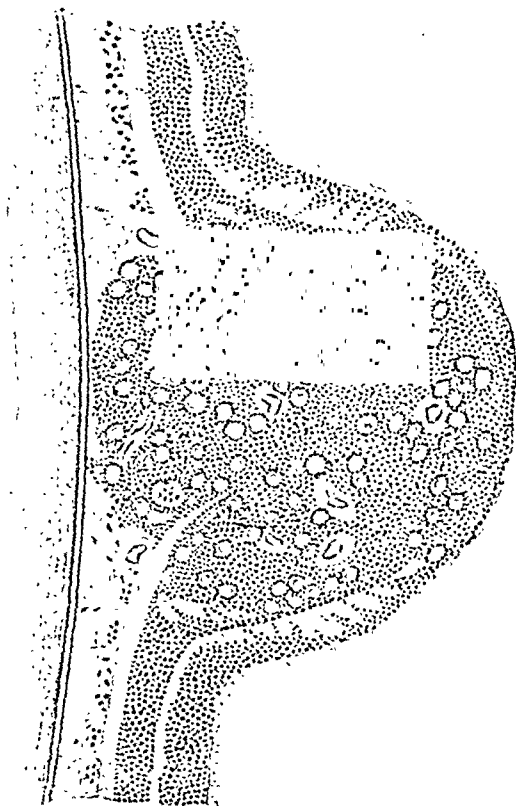


Fig. 11.—Millary nodule (glioma) springing from the inner nuclear layer of retina, its location beautifully shown in Fig. 12, where a portion of the retina has been pressed against the posterior surface of the lens, the magnified growth shown here appearing as a minute nodule. (After Wintersteiner.)

spread, and near it could be detected a small fresh area of a similar nature.

There could now be no doubt about the diagnosis. The mother was informed that the eye was affected and was requested to return March 21 and bring the father, which she did. The areas of infiltration had increased both in area and thickness, and the parents were informed of the true

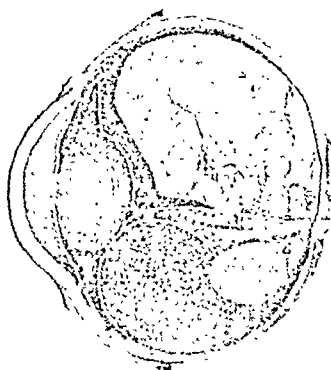


Fig. 12.—Section of globe, showing three gliomatous nodules in the totally detached retina, the third being very minute and seen near the posterior pole of the lens on which a part of the retina has been reflected. This nodule shown much magnified in Fig. 11. (After Wintersteiner.)

state of affairs. To save life enucleation was urged; that was refused, and the patient disappeared. Dr. S. C. Ayres was consulted and confirmed my diagnosis.

The child received no further professional attention till April 17, 1901, when the parents returned, asking that an operation be made, if only to relieve the sufferings of the child, as it now cried or moaned constantly, refused to eat, and was rapidly becoming emaciated. The globe was protrud-

ing and had ruptured (Fig. 13). The child was readmitted to the hospital the same day and under chloroform, exenteration of the orbit was performed solely to afford temporary relief from pain. The growth filled the orbit, the optic nerve having become enlarged so that its diameter was almost equal to that of the globe (Figs. 14 and 15). Caustics were not applied on account of the hopelessness of the case.

In three days the child had again become playful and free from pain. June 3 the cavity had healed. The child has gained in flesh and is very bright and happy.

In a recent communication the family physician, Dr. Shepard, states that in September the patient began to suffer again and was seized with convulsions, which gradually increased in frequency and severity and could be controlled only by the administration of chloroform. The pain was never a "marked feature." The child died Nov. 7, 1901. No autopsy could be obtained.

CASE 3.—H. M., aged 2 years, was brought to me by her parents for a final opinion. I found it to be a typical case of



Fig. 13.—Baby Edwards.—Right eye removed three years before this picture was taken. No recurrence, nor was there any sign of it at the time of death, about eight months later. The left eye protruding and globe ruptured from extension of growth, beginning primarily in this eye.

neuro-epithelioma retinae of the left eye at the end of the first stage, and advised immediate enucleation. They then informed me that this coincided with the opinion given by Drs. Ayres and Sattler. The operation was performed by them, and with their permission I merely state the condition of the patient as I saw her, and also her present condition as ascertained by a letter from the father, under date of Feb. 6, 1901, wherein he states that the child is in excellent health and attending school. A recent examination by an oculist showed the right eye to be perfect, excepting that it required a glass for correcting a moderate error of refraction, the vision becoming normal.

It is now 9 years since the operation, and as failure to recur after two years means a cure for the operated side, and the present age of the child (11 years) brings it almost absolutely beyond the period of development, we may consider the child's life saved.

CASE 4.—L. L., aged 18 months, was examined Jan. 18, 1897. His parents and grand-parents are all living and well;

no history of cancer, tuberculosis or consanguinity. He had chicken-pox at the age of six months, but no other diseases. About a month previous, the mother first noticed a glistening appearance of the left eye, at first toward the inner part, but it spread quickly, involving almost the whole of the pupil. On bandaging up the well eye, the child acted as if blind, and tried to remove the bandage. He sleeps well, has not lost

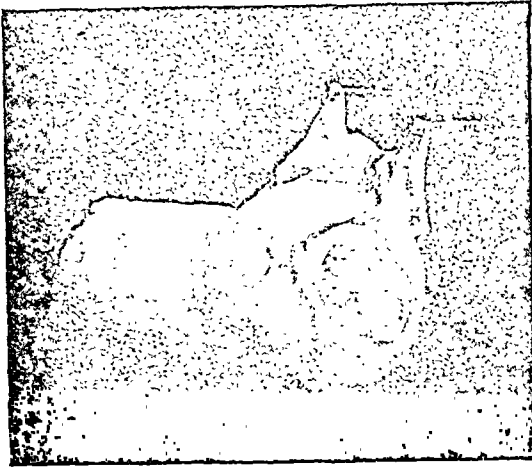


Fig. 14.—Baby Edwards. Left eye, showing also enormous infiltration of optic nerve.

any in weight, and apparently suffers no pain. The mother has three children older and in perfect health and has had one still-born.

This case was referred to me by Dr. F. G. Stueber, Lima, Ohio, for an opinion as to the character of the growth. As this was a typical case of glioma retinæ, in the latter part of



Fig. 15.—Baby Edwards. Section of left eye and portion of enormously infiltrated optic nerve. The lens was still clear.

the first stage, I could only confirm the Doctor's diagnosis, and urge, as he had done, the speedy removal of the eye, which was done Jan. 27, 1897, the examination after removal confirming the diagnosis. In answer to my letter of inquiry, sent Feb. 6, 1901, Dr. Stueber stated that the patient resided in an adjoining city. He last saw him June 25, 1897, when there was no evidence of return, and that he has since heard that he is still in perfect health.

In answer to a letter of inquiry, the mother answered, under date of Feb. 10, 1901, that the boy was in perfect health, with no evidence of a return of the growth, 4 years after the operation.

CASE 5.—H. W., aged 2 years. The following notes of this case I have taken from the record of my former associate, Dr. Joseph Aub: "About two weeks ago a yellowish-white reflex was first noticed in the right eye, which has been growing more perceptible daily, with deviation of the eye outwards. June 9, 1887.—The eye was examined to-day under chloroform. The entire inner and lower portion of the anterior half of the eye is taken up by a tumor, irregular in shape, and rich in blood vessels upon its surface. The entire outer half of the retina is detached; tension normal; deviation outwards well marked; no response to light. Dr. S. C. Ayres having been consulted, and agreeing in the diagnosis, assisted in the enucleation of the eye. Removed a liberal piece of optic nerve. Prompt healing."

I examined this patient in November, 1901, more than 14 years after the operation, and found the orbital cavity normal, both in size and appearance, and absolutely no asymmetry of the face, a point of interest in connection with the removal of the globe during infancy. The left eye was normal.

RESUME OF THE CASES.

Counting each eye as a case we have six operations. In speaking of a cure, I refer only to the operated eye.

Case 1.—Right. Third stage. Optic nerve affected beyond point of section. Recurrence and death.

Case 2.—Right. Beginning of second stage. Optic nerve normal beyond point of section. Three years and two months since operation. Cured.

Case 3.—Left. Beginning of third stage. Optic nerve affected beyond point of section. Recurrence and death.

Case 4.—Left. End of first stage. Nine years since operation. Cured.

Case 5.—Left. End of first stage. Four years since operation. Cured.

Case 6.—Right. End of first stage. Fourteen years since operation. Cured.

Three cases, or 50 per cent., were operated on during the first stage and all were cured; one case operated on in the second stage was cured. Two cases operated on in the third stage were fatal.

While the number of cases is very small, yet there can be no doubt that operations during the first stage with extensive resection of the optic nerve will give us a large percentage of recoveries for the operated side. We must also remember that in a great many of these cases the affection will involve the other eye sooner or later; by early removal of the second eye, however, the patient's life may be saved.

DISCUSSION.

DR. HERMAN KNAPP, New York—I had a case in which the eye was removed while still seeing. When I first saw the case the diagnosis was somewhat doubtful, but in three or four months I saw the case again, when the picture of glioma was very distinct and I advised enucleation. The mother consented, the operation was done without accident, and everything went on nicely, but the parents sued me for damages and gave me a great deal of trouble. I had to furnish proof that it was a glioma. I had the specimen and experts testified that it was cancer and that without operation death would have inevitably resulted. Then I had to prove that that specimen was the eye of the patient. Some of my colleagues had seen the patient before the operation and testified that it was his eye. Then I had to prove that this was the boy the witnesses had seen. Then they made the plea that the eye had been removed without knowledge of the parents, although it had been done with their consent, and some of the students who had been present at the examination testified to that fact. The question was raised of what

would have been the result if the boy had been let alone, and the experts all testified, inevitable death. Dr. Henry D. Noyes, as an expert, said that it was the unanimous verdict of the profession that no one with that disease can live without an operation and without an early operation. The judge asked Dr. Noyes: "Are you a friend of Dr. Knapp?" Dr. Noyes said: "We have been competitors in the same field of work, but we have always been on friendly terms." Then the judge said: "The case is clear; the Doctor did his duty: he sacrificed the limb to save life. The jury is dismissed."

DR. JOHN E. WEEKS, New York—I want to speak of one point: the involvement of mesoblastic tissue as these tumors advance. It is not unusual to find mingled with the cells that make up the glioma, cells that are distinctly of mesoblastic origin, so that the term gliosarcoma is particularly applicable in these cases. Epitheliomata when they recur sometimes present the appearance of epitheliomatous tissue combined with sarcomatous tissue.

DR. S. C. AYRES, Cincinnati—In reference to one of the Doctor's cases, I am familiar with it and it is nine years now since the enucleation and she is in very good health.

DR. A. R. BAKER, Cleveland—Just a word in regard to the difficulties of diagnosis. I enucleated an eye two or three weeks ago in which I had diagnosed glioma and in which several local oculists made the same diagnosis and yet the pathologist says he does not think it is glioma. A few years since we had another case in Cleveland in which we made a diagnosis of glioma and enucleated the eye and when the pathologist opened it up it was a mere cyst with a very thin wall. The only other case in which I have diagnosed glioma was one I met in my first year of practice, in which I enucleated and the child died subsequently from recurrence.

DR. EDWARD JACKSON, Denver—Within a year I have seen and studied, ophthalmoscopically, an eye, regarding which, had it been in a child, I would certainly have made a diagnosis of glioma. It is a blind eye, in a woman nearly forty. It has been blind for many years. I think it is probably of the nature of a case reported by Dr. de Schweinitz last year at the American Ophthalmological Society, in which he enucleated the eye. There was a greatly thickened, degenerated, partially cystic retina. In my case there was a clear vitreous, and the retina markedly thickened and of irregular surface. Without the history of blindness for many years, and the patient being an adult, I think one would be justified in making a diagnosis of glioma.

DR. LUCIEN HOWE, Buffalo, N. Y.—I just want to say that I think we report our cases of pseudo-glioma more promptly now. On looking up the literature I find that there are very many more cases on record than I had any idea of. If such cases were reported oftener we would have less trouble about malpractice suits. When there is reasonable doubt, I am inclined to think the eye should be removed.

DR. WALTER L. PYLE, Philadelphia—I desire to cite a very unusual source of confusion in the diagnosis of retinal glioma, which has not been mentioned. Recently, we had at Wills' Hospital a case which, according to general consensus, was one of advanced retinal glioma, but which after enucleation proved to be subretinal cysticercus.

DR. S. D. RISLEY, Philadelphia—The differential diagnosis between true glioma and pseudo-glioma is in some cases very difficult. I recall one instance where, after consultation with several colleagues of the staff at the Wills' Hospital the consensus of opinion was in favor of pseudo-glioma. Operation was deferred and the child discharged from the hospital, but returned in two weeks with great pain and marked increase of tension. The ball was excised and the growth proved to be a true glioma. It would have been better to have erred on the side of safety and enucleated the eye at once. The disease speedily progressed in the orbit and the child died in a few weeks.

DR. MARK D. STEVENSON, Akron, Ohio—A few years ago I had a case in which a diagnosis of glioma retinae was made. It was then very small and I advised enucleation; the parents refused an operation after other specialists had claimed it was not glioma. The eye was removed about a year later in

another city, and the child has since died from an extension of the tumor to the brain. A blind eye presenting a typical glioma should be immediately removed, as there is little to gain and much to lose by delay.

DR. HOLMES, in closing—In two out of three in the first stage the tumor was quite small, one not filling up more than one-quarter of the globe, so that there was considerable sight left at the time of enucleation. In the double enucleation there was no recurrence in the other eye for two months after the first was removed. The mother brought the child in because she thought its sight was failing, as it was beginning to stumble, and on examination we found the very beginning of a glioma, so small that others who saw it thought it might be acute exudative choroiditis. They came back in one week when it had grown considerably and two weeks later enucleation was advised, but refused. They came back five or six months afterward to have the eye removed for relief of pain.

I think it is very important to secure witnesses and the absolute consent, preferably in writing, from the parents, if you are going to remove an eye that still has considerable sight left. I think the golden rule applies in these cases—when in doubt, take the side of safety. In one case called pseudo-glioma I had to remove the eye afterward on account of inflammatory condition and I deem it best to take the side of safety and remove an eye that you can not prove to be pseudo-glioma.

GASTROINTESTINAL PERFORATIONS AND THEIR DIAGNOSIS.*

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INTRODUCTION.

That the most urgent need of the surgeon, when called to a gunshot wound of the abdomen, at the end of the nineteenth century, should be exactly similar to that of the surgeon under the same circumstances during the closing days of the eighteenth century is truly a remarkable circumstance. This painful lack of ingenuity or resourcefulness is a sad commentary on the century, which in many respects has been so brilliant from a surgical point of view.

In support of the accuracy of the above statement, a glance at what might be called ancient history will reveal an instance in which exactly similar circumstances gave rise to exactly the same line of thought with the employment of almost the same methods and materials in an effort to arrive at an early diagnosis in a case of suspected or possible perforation of the gut. In "Hunter on the Blood and Inflammation and Gunshot Wounds"¹ we find the report of a gunshot wound of the abdomen. At that time, as in our own day, the all-important question was as to the perforation or nonperforation of the "tractus alimentarius." In this connection he tells us that "fumes of tobacco by clyster" were prepared, "but fearing that such a procedure would cause an increase of the disease" they were loathe to employ it, and finally decided not to do so, the patient dying in about thirty-six hours.

Here is a suspected perforation occurring over one hundred years ago, and it is worthy of note that practically parallel cases (if the words hydrogen gas or ether vapor be substituted for fumes of tobacco, and with the exception that fear of an increase of the disease did not prevent the later surgeons from carrying the idea into effect) may be found in the literature not far from the close of the last century. This striking similarity shows

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

but a pitiful progress, and it is our earnest desire and sincere hope that the next few decades may present a better showing in this particularly and singularly neglected phase of abdominal surgery.

The sciences of medicine and surgery differ radically in many respects, but in none is the difference so striking as in the character of the advances made in these respective branches during the past few years. In medicine progress has been made in enormous and rapid strides, almost exclusively along the line of diagnosis, resulting in an almost absolute and early diagnosis in many of the more common diseases, such as typhoid, pneumonia or tuberculosis. But, comparatively speaking, medical treatment is far behind the methods of medical diagnosis, and in many instances, despite new modifications and suggestions, the treatment is substantially the same as that practiced years ago.

Osler² says, speaking of pneumonia, under diagnosis: "No disease is more readily recognized, in a large majority of cases"; and under treatment says: "Pneumonia is a self-limited disease and runs its course uninfluenced in any way by medicine, and can neither be aborted or cut short by any known means at our command."

William Pepper,³ speaking of typhoid fever, says: "In this disease it is preëminently true that a good nurse without any doctor is better than the best doctor without a good nurse."

Osler² says: "The profession was long in learning that typhoid fever is not a disease to be treated by medicines; careful nursing and a regulated diet are the essentials in a majority of the cases." And speaking of the treatment of tuberculosis: "No medical agents have any special or peculiar action on the tuberculous process." On the other hand, we find wonderful advancement in the diagnosis of these same conditions which defy any specific treatment. Such measures as the diazo and the Widal reaction, while not absolute, are of great aid in doubtful cases of typhoid. The finding of the tubercle bacilli and the tuberculin test aid materially in making the diagnosis of tuberculosis a very simple matter.

Refinements of diagnostic measures, while of the greatest value in many cases and good things in themselves, are of little or no avail unless there is some method of efficient treatment which can be instituted as soon as this early and accurate diagnosis has been arrived at.

In the domain of surgery the most striking improvements have been in the line of treatment, and, exactly opposite to the subject of medicine, diagnosis has not kept apace. For example, carcinoma and other malignant neoplasms and peritonitis can be treated successfully if recognized early, but are rarely diagnosed before treatment is of little avail. This is a most deplorable condition of affairs and should be improved. Of what value is it to physician, patient or relatives to be able to diagnose correctly and soon after onset a case of pneumonia, if no remedy or line of treatment is at hand with which to cure the disease? On the other hand, of what value is it to be able to remove a carcinoma of the pylorus, or even to ablate successfully the entire stomach, if we are unable to make a diagnosis till very evident symptoms arise, by which time the size of the tumor or metastasis will have made the removal of the entire growth and ultimate recovery of the patient an absolute impossibility; or again, in perforation of the intestine, if repaired immediately after injury, the result almost invariably will be union of the gut and recovery of the patient. But of what value is this famil-

ilarity with the technic of the enterorrhaphy when one does not know whether or not there is present an injury of the gut?

In the coming century the indications to be fulfilled are: in medicine, advancement in treatment, so that the physician will not only know the pathologic condition present, but in addition will be able to initiate some line of treatment which will result in the recovery of the patient. In surgery, on the other hand, treatment has advanced as far as it is practicable, and shall have to progress more slowly while the attention of originators and investigators is devoted to improvements of diagnosis, so that the surgeon will not only be familiar with the *modus operandi* of the various operative procedures, but will also be enabled to employ them at a time when he can, at least, hope for more than palliation as a result.

The past century, so productive of exceedingly valuable suggestions and discoveries in all branches of medicine and surgery, has passed by the diagnosis of the gastrointestinal perforation almost without a trace of improvement. To be sure, attempts at an early diagnosis have been made, but the methods employed have been so crude and unscientific that the wonder is, not that they have been relegated to the past; but that they had ever been proposed seriously, even by their originators.

OLDER METHODS OF DIAGNOSIS.

The different attempts in this line may be arranged in a chronologic way, as follows:

1. Hunter: Fumes of tobacco by clyster.
2. Senn: Hydrogen gas per rectum.
3. Sutton: Ether vapor per rectum.
4. Finney: Abdominal incision.
5. Lofton: Intestinal perforation searcher.
6. Exploratory needle and syringe.

The earliest suggestions along this line we find in "Hunter on the Blood and Inflammation and Gunshot Wounds," already referred to, where no other attempt is seen in the available literature till in 1888, when Senn⁴ advocated the injection of hydrogen gas per rectum as an "infallible" method of determining whether or not the gastrointestinal tract was intact. If so, the gas made a harmless passage and escaped at mouth. If a perforation existed, then after causing tympanites the gas was found to escape at the abdominal wound, where it was recognized by its being ignited and burning with a characteristic blue flame.

And again in 1898, Senn⁵ claimed: "The writer has shown by his experiments on animals, and later by his clinical experiments in the treatment of a number of cases of gunshot wounds of the abdomen, that the rectal insufflations of hydrogen gas can be relied on in demonstrating the existence of perforations of the gastrointestinal canal before opening the abdomen." But despite this claim, the fear of causing fecal extravasation and the unreliability of the method has prevented its adoption.

Floyd McRae⁶ says: "As to the gas test of Senn, it is worse than useless; it is dangerous; it is only corroborative; it is not conclusive as to a nonperforation and it greatly enhances the difficulty of the subsequent operation and increases the danger to the patient, because it produces extravasation of the contents of the alimentary canal into the peritoneal cavity."

Thomas Manley⁷ says: "Inflation of the alimentary canal, from either above or below, may perhaps aid in deciding upon the diagnosis, but it must be regarded as

an expedient attended with more danger than counter-balances the additional knowledge it may convey."

In 1898 E. M. Sutton⁸ reports some experiments in which he injected air, impregnated with ether, into the rectum as an aid in diagnosing gastrointestinal perforations, claiming as advantages over hydrogen gas that the ingredients are always at hand and no special apparatus is necessary and there are no noxious properties. He⁹ reports a case of gunshot wound of the abdomen in which the alimentary tract was possibly injured; vapor of ether injected into the rectum was soon belched from the stomach. On which the diagnosis of no perforation was made, which in all probability was correct, because the patient made an uneventful recovery. The objections preventing the adoption of the hydrogen gas method applies with equal force to both of the other methods similar in character, tobacco fumes and ether vapor.

In Keen's¹⁰ article on "Surgical Treatment of Perforation of the Bowel in Typhoid Fever," we find he gives Finney credit for the suggestion "that in any case in which the diagnosis is obscure and there is reason to suspect the existence of a perforation, a small incision be made under cocain anesthesia and that cultures be taken from the abdominal cavity. This exploratory incision would be followed by very little disturbance to the patient and very slight risk. If the presence of a septic peritonitis is determined this incision can be enlarged and the operation for the relief of the perforation and peritonitis can be at once carried out."

The most obvious objection to any such method is that we must await the development of a peritonitis. A diagnosis so early that when reached, the treatment will concern the perforation alone and at a time when there will be present no peritonitis to complicate the prognosis and treatment, is the need, a fulfillment of which we are endeavoring to find.

If we are to rely on this method in cases in which "the diagnosis is obscure," which will be in the great majority of perforations, we must await the increase in growth of the bacteria after their escape from the lumen of the canal in order to find them after making a small abdominal incision; in fact, we must await the development of a peritonitis before we are sure of the diagnosis. Its negative value would certainly be questionable, for cases will occur in which the incision and cultures were made too soon, before the bacteria have had time to multiply, which, if examined later, would give a positive result. Such a method when positive would frequently be too late and when negative could not be relied on universally. A case warranting an opening of the abdomen for possible perforation would certainly warrant, in addition, an exploration of the intestinal tube; to stop short of that after having opened the abdominal cavity, either by a large or a small incision, is insufficient.

The use of the exploring needle as a diagnostic measure in cases of peritonitis, perforative or otherwise, has been recommended. Osler² relates a case of ruptured tubal pregnancy which closely simulated peritonitis, in which he withdrew a bloody fluid from the peritoneal cavity with an aspirating syringe. But the question is ably summed up by R. H. Fitz:¹¹ "With reference to the exploring needle, the needle thrust into the iliac region may draw out a fluid which looks like pus and smells like pus, but which in reality is intestinal contents, so that apparently positive results are not necessarily demonstrative of pus. On the other hand, negative results are so numerous that it is better to place no dependence on the use of the exploring needle."

In 1901 Lucien Lofton¹² described an intestinal perforation searcher, which consists of a smooth glass tube 24 inches long and half an inch in circumference with an enlarged funnel-shaped extremity at one end. After perfect sterilization a small, loosely-fitting piece of dry absorbent cotton is inserted into the enlarged end, and the smaller end now allowed to descend into the abdominal cavity. When by continued application of your nose to the funnel, should perforation exist, you will almost immediately get the aroma of escaping intestinal fluids.

Chemistry, electricity, the x-ray, the microscope, spectroscopy and the polariscope have performed feats of diagnosis but little short of the miraculous in many branches of medicine and surgery, but in the case of the gastrointestinal perforations these exceedingly important adjuncts to diagnosis have not been called on to contribute to our information. As Chittenden¹³ has said: "The time is at hand when the practice of medicine is becoming what it was long ago, but then unjustly called a true science and art. No continuing success can be built on the empiricism or on the proportion of guess-work which is inseparable from the dependence on the experienced eye. Diagnosis is now the pass word in medical science."

PRESENT ACCEPTED METHODS: A. TO WAIT FOR SYMPTOMS.

In the usual cases of penetrating wounds, in all cases of contused wounds of the abdomen, in many cases of typhoid and other ulcerations of the gastrointestinal tract, it is absolutely impossible to arrive at a diagnosis of perforation before: 1, the development of the characteristic signs and symptoms of peritonitis, or 2, unless an exploratory laparotomy is performed. In the unusual cases, such as those which the injured viscus presents at the abdominal wound or in which the contents escape, the diagnosis is, of course, self-evident, but unfortunately such cases are extremely rare, and as regards them sufficient will have been said in their mention.

Maurice Richardson:¹⁴ "The truth is that no exact diagnosis is possible in the early hours of many acute abdominal emergencies."

E. D. Fenner:¹⁵ "I am impressed by the fact that we can never tell from general symptoms, or external appearances, whether the viscera have been wounded or not."

Flagg:¹⁶ "When a man receives a penetrating gunshot wound of the abdomen there is no immediate way of determining without operation if the abdominal viscera are wounded or hemorrhage is taking place."

N. Senn:¹⁷ "A visceral injury of the stomach or intestine seldom gives rise to symptoms on which the surgeon could rely in making a positive diagnosis."

The chief objection to awaiting the development of a peritonitis in a case of suspected perforation (which will be characterized by pain, collapse, vomiting, abdominal tenderness and rigidity, resp. costal, rapid and superficial 30 to 40, temperature 100 to 103 F., or sub-normal, pulse rapid, small and weak, 100 to 150 tongue dry and coated, free fluid in abdominal cavity, liver dullness absent, tympanites—and with all these the well-known facies, Hippocratic) is that, if such be the correct suspicion, the diagnosis will not be arrived at till the peritonitis will have become so far advanced that in the majority of cases with our present methods the treatment will be of little or no value. Instead of being called on to repair a simple intestinal perforation, we must treat a case of peritonitis, more or less virulent, complicated with a perforation of the intestinal tube.

Fitz³ says: "Peritonitis from perforation of the stomach or free portion of the intestine into the normal peritoneal cavity is almost invariably fatal." If this be true it is therefore our plain duty to diagnose and repair the damaged gut before peritonitis has become established, if possible; if not possible, then before it has progressed very far. That leads us to the question: How soon after perforation does peritonitis set in? This, unfortunately, can not be answered directly, because it is dependent on many qualifying circumstances, such as the number and the caliber of the perforation, the locality of the same, the variety, character or virulence of the escaping intestinal contents and, of no little importance, the resistance of the individual against infection. Peritonitis following intestinal perforations is dependent for its characteristics on the bacterial flora of the canal at the site of traumatism.

Cushing¹⁸ has shown that in the upper portion of the intestinal tract the bacterial flora is more scanty than in the lower portion, hence wounds of the duodenum and jejunum are less fatal than wounds of the lower portion of the ileum and large bowel, all other conditions being equal.

In Keen and Tinker's¹⁰ table of 158 cases of typhoid perforations, the shortest space of time elapsing between perforation and operation was one and one-half hours, in which case there was "a marked general peritonitis" present at the time of the operation, and in another case, four hours after perforation, "seropurulent fluid in peritoneal cavity, serosa injected," is noted. In another, after same time, "Considerable cloudy serous fluid was noted in abdominal cavity with some serous flakes on intestine." In none of the 158 cases, the time varying one and one-half hours to several days, is the absence of peritonitis noted.

Briggs,¹⁹ in reviewing six cases of typhoid perforation operated on 8, 5, 4, 3, 1, and an unknown number of hours after perforation, says: "There was a moderate degree of peritonitis at the time of operation in all these cases judging from the amount of free fluid in the abdominal cavity."

In Shattuck, Warren and Cobb's²⁰ series of 24 cases, at the operation general septic peritonitis was not evident to the eye in Cases 1, 3 or 7. 1. Operated on in 3 hours; death 5 days; internal hemorrhage. 3. Operated on in 2 hours; death in 3 days; general peritonitis. 7. Operated on in 8 hours after pain, 5 hours after collapse; no free fluid; no extensive sign of peritonitis.

Robinson²¹ says, in speaking of gunshot wounds of abdomen in military practice: "Generally it is from six to twelve hours or more before these cases can be brought to the operating table, and at that time infection, if it is to occur, has already taken place, or if not the danger is passed."

In Oliver's²² tables of gunshot wounds of abdomen we find a case operated on one and one-half hours after the accident, and at operation a wound of the stomach with "a beginning general peritonitis" was noted.

Richardson¹⁴ says, in speaking of gastric ulcer perforations: "By the end of twelve hours, and often sooner, the infection of the first few moments has become a peritonitis under full headway."

In Tinker's¹⁴ analysis of 75 cases of perforated gastric ulcers which were operated on, the shortest time elapsing between perforation and operation was two and three-fourths hours, and at operation "a turbid fluid with lymph flakes on omentum and liver" was found.

H. Gage²³ details four cases of traumatic rupture of intestine, the shortest time between accident and opera-

tion was twenty-six hours, and at that time peritonitis was fully established.

Cushing²⁴ says: "In Case 1: An early diagnosis and immediate operation *before peritonitis set in* (italics are ours) led to recovery." In describing the operation, he says: "On opening the peritoneal cavity a considerable amount (perhaps 200 c.c.) of the seropurulent fluid escaped, coming chiefly from the pelvis. Cultures were taken from the fluid and it was immediately examined in cover-slip preparations. It contained a great number of polymorphonuclear leucocytes, but no microorganisms could be found. The serosa of the intestine was everywhere greatly congested, but evidently the greatest reaction was in the right iliac fossa, where the ileum was especially injected and covered with a slight fibrinous deposit. . . . A few fine, filmy adhesions held the omentum to this part of the bowel," and on page 215 he again repeats: "The picture was complete *before the onset of peritonitis*," and on page 216: "The perforation was closed *before there was any evidence of peritoneal infection*, the culture from the free fluid remaining sterile."

In this case there certainly was a peritonitis present at the time of the operation, which accounts for the "seropurulent fluid containing many polymorphonuclear leucocytes (pus), the injection of the serosa of the intestine, especially in the right iliac fossa, with the slight fibrinous deposit and the few fine, filmy adhesions holding the omentum at this part of the bowel," and which gives a picture of beginning peritonitis. The fact that bacteria were not found and cultures from the free fluid remained sterile, does in no way prevent this condition from being properly called an inflammation of the peritoneum—a peritonitis. Had the case not been operated on, in all probability an abscess would have formed, which might have remained circumscribed for a greater or less length of time, and finally ruptured into the free peritoneal cavity, into the bowel, or externally, or not ruptured but lost its virulence and remained as an abscess. The formation of a fecal fistula is a most convincing argument that such was the case.

From these cases it will be seen that there is no exact space of time between perforation and peritonitis; it is long in some and short in others; therefore, as we do not know which will be short and which will be long, we must act as though the time will be short in all. A second reason for not awaiting the appearance of peritonitis in such suspected cases is, that very frequently the complete symptom complex may not appear, one or more of the more important features may be absent, with a peritonitis progressing rapidly.

F. A. Dunham² has said: "The more virulent the infection the less marked are the local signs of peritonitis," so casting a shadow of doubt on the diagnosis, even after waiting, and as a result of the waiting nothing at all has been gained. For example, Alex McPhe-dran²⁵ cites a case of apyrexial typhoid, a man in fair physical condition, in which perforation occurred without any localizing adhesions and symptoms of only moderate severity, not sufficient to alarm either himself or his friends."

C. A. B. Horsford reported an interesting case of perforated gastric ulcer in which the gastric contents escaped and accumulated in the right iliac fossa, presenting all the symptoms of appendicitis. The patient did not have the physical symptoms accompanying perforation; the pain was not severe, the abdomen was not generally distended, and the symptoms giving rise to a diagnosis of appendicitis did not arise until several days

after the perforation took place. The patient was not operated on, but the condition was discovered post-mortem. Again in typhoid, especially where the patient is in the typhoid state and unconscious, the symptoms of pain and tenderness may not be attainable, thus casting a legitimate doubt on the diagnosis.

Cushing²⁴ has described "a preperforated stage of typhoid ulceration," during which, usually occupying several days, we may notice abdominal pain, tenderness and leucocytosis, with a disappearance of the latter after perforation has actually occurred. This pain he attributes to involvement of the serosa, with possibly the formation of omental adhesions. He includes in this stage the whole period between the first involvement of the serosa with the formation of customary adhesions until these adhesions (which may for a time form the floor of the ulcer after the serosa has given away) have themselves broken down and general peritonitis has taken place.

But Monad and Van Verts,²⁵ after examining the histories of 27 cases, say that the formation of these adhesions in threatened perforation is exceedingly rare. They also claim that peritoneal infection is not always a rapid fulminating affair; that it may occur by the migration of the bacteria through the damaged and almost necrosed intestinal wall.

Cobb²⁶ says: "In mild cases of typhoid complaints of abdominal pain should lead to a strong suspicion of beginning peritoneal infection through a preperforative stage, or a slow peritoneal infection through a perforation with or without temporary adhesion, or a beginning infection from some other source than the intestine."

A. Berg,²⁷ in discussing the preperforative stage, says: "Even granting that the peritoneal symptoms are from an involvement of the serosa, which covers a deep ulceration of the Peyer's patch, does this mean necessarily that the serosa will always give way and permit of extravasation into the free peritoneal cavity? Certainly not. How, then, can we think of interfering surgically for a perforation that does not exist and which may never take place? When our diagnostic acumen will have reached a higher stage of development, so that we can differentiate the signs of local peritonitis as caused by an impending perforation from the peritonitis produced by other pathological conditions, and when we are able to foretell which serosa over a deep ulceration will give way, then the preperforative stage will be a reality."

Keen,¹⁰ in speaking of this preperforative stage, says: "Should it ever prove possible to accurately diagnose the preperforative stage, that unquestionably will be the most favorable time for the operation." And in his conclusion: "If it be possible to determine the existence of a preperforative stage."

Another reason why it is an unsafe practice to await the symptoms of peritonitis in these cases is that such symptoms are in some instances absolutely unreliable; they may be present more or less completely and at operation no perforation, or even peritonitis, may be found.

Shattuck, Warren and Cobb, in their series of 24 cases of operations for perforation, report three cases in which the symptoms lead to operation, but no perforation nor peritonitis was found at the operation. Two of these cases recovered and one died.

Cushing, in eight cases, reports three operated on for perforation, in which no perforation existed; in one no lesion to account for the symptom was found at the operation; recovery was uneventful. In another the symptoms were caused by an iliac thrombosis; the patient subsequently died of pulmonary embolism; and in the third the symptoms of perforation were due to appendic-

ular colic. No perforation was found, but a chronic adherent appendix was removed; recovery.

Briggs, in a series of six cases, reports one in which symptoms of perforation occurred, but the opening of the abdomen under local anesthesia revealed a peritoneal cavity apparently normal and no perforation to be found; convalescence slow; recovery.

G. G. Davis²⁸ reports three cases of typhoid operated on for perforation; there was no perforation found in one case; recovery.

At the last meeting of the Association of American Physicians, A. H. Smith presented a paper entitled "Two Cases of Supposed Gastric Perforation," in which no explanation of symptoms was found at operation.

So if mistakes are made by these experienced clinicians (1 in 6, 3 in 8, 3 in 24), surely if the less talented men are to follow in their footsteps more mistakes will result. To be sure, in these cases few deaths and little or no inconvenience have resulted, but in those less favored by surroundings and nature, who are to make their diagnosis on these symptoms, will they meet with as fortunate an outcome? Perhaps if all cases were reported we might discover that death will occur oftener than we find in these reports.

Among the many conditions which may resemble peritonitis so closely as to lead to the error, we call attention to acute entero-colitis, intestinal obstruction, acute hemorrhagic pancreatitis, hysterical peritonitis, embolism of mesenteric artery, ruptured tubal pregnancy, intestinal hemorrhage, cholecystitis, suppurative mesenteric glands, diaphragmatic pleurisy, iliac thrombosis, appendicular attacks, etc.

There is no pathognomonic sign or symptom or group of symptoms of doubtful perforation of the gastrointestinal tract, Stewart to the contrary notwithstanding, who says:²⁹ "Obliteration of dulness in a flat belly or resonance over the posterior and lateral areas of hepatic dulness, in the distended abdomen and cellular emphysema are the only pathognomonic signs of ruptured intestine. They are not due to infection, but are the rare signs of rupture, not ulcerative, perforation of the gut." He then adds: "The occurrence of any of the above signs should make us suspicious, and suspicion should in most cases be synonymous with exploration." Showing that the above signs are not pathognomonic for they should merely make us suspicious, as pathognomonic signs are unmistakable indications of a given disorder, the term suspicious rather than pathognomonic should have been used.

Those cases in which the intestinal contents escape from the abdominal wound, or in which the injured portion of the gut presents at the wound, are not doubtful cases, but instead are plainly evident and have been spoken of above.

In the doubtful or possible perforation the absence of the liver dulness was for a time looked on as a positive indication of this condition, but its value as such has been questioned, since it has been demonstrated that the liver dulness may be diminished or even obliterated by tympanites alone.¹⁵ This is accounted for by a distended coil of intestine insinuating itself between the liver and the abdominal wall, or in the case of extreme distention of the intestine the liver, entire, may be pushed up.

Another fact showing the fallibility of the sign is that in many cases in which the liver dulness was normal, at operation perforations have been found, so rendering it worthless as either a positive or negative sign.

An uncommon symptom is "The Acoustic Phenomenon of Levaschoff." A rushing sound was heard with

the stethoscope synchronous with the descent of the diaphragm, caused by the air or gas passing through the perforation, owing to the increased pressure due to the descent of the diaphragm. But it is rarely noted and is not now generally accepted.

The presence of free fluid in the abdominal cavity, in connection with the other symptoms, may point strongly toward a perforation, but it must be remembered that hemorrhage alone may give rise to the same physical signs, also simple hydroperitoneum must be excluded. On the other hand, in very few cases of perforation is there an escape of sufficient fluid to be detected at an early physical examination, at a later date, when the symptom is of infinitely less value, it may, of course, be found in some cases.

Kinnecutt³⁰ has been able to detect, early in these cases, before abdominal respirations have ceased, a fine peritoneal crepitation very similar to that heard over an inflamed pleura; a very careful auscultation of the entire abdomen is necessary, and it has as yet not been generally adopted.

Hematemesis after probable perforation of the stomach has been looked on, and is still regarded by many, as a pathognomonic sign of perforation of the stomach, but Rodman³¹ quotes a case of Mayo Robson as follows: "I explored the abdomen for a stab wound, and as the patient was vomiting blood I expected to find a wound of the stomach, but discovered no perforation of the stomach wall, though I had to ligate the superior mesenteric vein, the patient making a satisfactory recovery; the hemorrhage was undoubtedly due to the bruising of the mucous membrane without rupture of the peritoneal coat." Thus showing that hematemesis after abdominal injury can not be relied on as a positive sign of perforation. In injury of the intestine the passage of blood per anum might, of course, be explained as above, but usually would occur too late to be of any practical value.

Leucocytosis as an aid to the immediate diagnosis of perforation has not been dwelt on to any great extent except in typhoid perforations.

Bloodgood³² says: "Examinations of the blood after abdominal contusion, to ascertain the existence of shock, hemorrhage or peritonitis, are not sufficient in number to allow of any conclusions."

Leucocytosis in acute peritonitis has attracted more attention, but in this connection it is not of so much value as the former, for it is our aim to arrive at the diagnosis before the establishment of a peritonitis, and when it is once established we can, as a rule, make a diagnosis without the aid of the leucocyte count.

As regards perforation and leucocytosis during typhoid, to explain the present status of affairs and to show the conflicting opinions among authorities, we may quote from Cabot: "A steadily increasing leucocytosis is always a bad sign and should never be disregarded, even when other bad symptoms are absent"; and from Cushing, who adds: "That a decreasing leucocytosis may be a much worse sign and should never be disregarded." This he explains very rationally as follows: "If there develops a localized peritonitis associated possibly with a preperforative stage of ulceration, or with a circumscribed slow-forming peritonitis, after perforation, it will usually be accompanied by an increase of leucocytes in the peripheral circulation; but if a general septic peritonitis develop the leucocytosis may be but transitory or overlooked, as it will disappear concomitantly with the great outpouring of the leucocytes into the general cavity."

So it seems that an increase of leucocytes signifies some inflammatory complications, such as phlebitis, otitis media, pneumonia, etc., among which may be localized peritonitis.

On the other hand, a fall of the leucocytes conveys to us the information that a diffuse septic peritonitis has already become established, the one thing we do not want to wait for. This drop in the leucocytosis does not occur at the time of the perforation, as we are led to believe, but, if the theory as to its cause is correct, it occurs at the time of the development of the diffuse septic peritonitis.

The so-called wave of leucocytosis, the gradual increase and then a sudden decrease, is considered by Cushing to be particularly characteristic of perforation, but Cabot, Blake and Hubbard³³ made frequent blood counts in normal individuals and patients suffering from typhoid, in which no perforation occurred, and found such a wave as described above, and they conclude: "That leucocytosis usually exists in typhoid perforations, but in order to be of diagnostic value such leucocytosis must be relatively steady and not of the type described by Cushing."

Leucocytosis in most cases must be considered as an ordinary symptom, subject to the various uncertain changes of any such symptom. It may at times be conspicuously prominent and again, for no visible or consistent reason, be entirely absent.

Such variations as perforation and even diffuse peritonitis with no leucocytosis, and in other cases characteristic leucocytosis with other symptoms, leading to an operation, which when performed shows no perforation or peritonitis, place it in the large category of unreliable symptoms.

Concerning the leucocytosis in conditions other than typhoid, most of the study has been in relation to appendicitis. A leucocyte count ranging between 10,000 to 15,000 or 17,000 can not be relied on to reflect the nature of the local lesion, since this degree of increase may be found in various conditions. But counts of 20,000 or more almost invariably indicate the presence of pus, gangrene or general peritonitis, one or all. But, on the other hand, again showing its uncertainty, in some cases of general peritonitis there will be no leucocytosis, because of the individuals being too weak to react against the infection.

J. M. Baldy³⁴ has recently written an article with the title of "The Examination of the Blood in Relation to Surgery, of Scientific but Often of no Practical Value and May Misguide the Surgeons."

(To be continued.)

The American Medical Association has prospered to such an extent during recent years that it now worthily represents the medical profession of the United States. That this was not the position of the society from ten to fifteen years ago is generally recognized in this country. We in Canada rejoice with the physicians of the American Republic in the growing prosperity of their great national medical association. The present happy condition is due largely to the increased harmony existing among medical men in all parts of the Union, the great executive ability shown by its officers, and the excellence of the official journal of the Association. The next meeting of the Association will be held in New Orleans, May 5 to 8, under the presidency of Dr. Frank Billings of Illinois. Special addresses—called orations—will be delivered as follows: Medicine, Dr. J. M. Anders of Philadelphia; Surgery, Dr. A. F. Jonas of Omaha; State Medicine, Dr. Wm. H. Welch of Baltimore. It is quite needless to tell our readers that Canadians who attend this meeting will receive the same sort of kindly and hearty welcome which has invariably been extended to our countrymen in the past.—*Canadian Practitioner and Review*.

THE RESPIRATORY QUOTIENT AS INFLUENCED BY TUBERCULOSIS.*

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INTRODUCTION.

In 1777 Lavoissier showed that oxygen was absorbed from air during respiration and that it united with carbon in the body, forming carbon dioxide. This discovery caused many observers to determine the amount of oxygen consumed by normal animals and the amount of carbon dioxide given off by them. They also studied the relation of one to the other. When we consider the volume of carbon dioxide exhaled divided by the volume of oxygen consumed, this relation is known as the respiratory quotient. Generally more oxygen is consumed than carbon dioxide given off.

The object of these experiments was to determine the influence of tuberculosis on the respiratory quotient. A number of secondary facts have been established or confirmed, incidentally.

METHODS.

Some of the early experimenters (Black, Priestly and LaPlace) analyzed the air of a chamber before and after an animal had been confined in it. The objection to this method is that the animal is not in normal

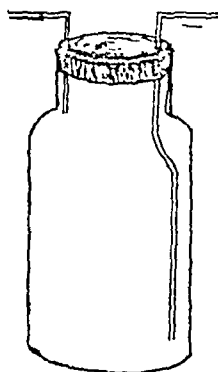


Fig. 1.—Animal cage 1. A large mouth bottle large enough to hold a rabbit. 2. A piece of glass tubing 6 to 10 mm. in diameter which extends through the cork (air tight) to the bottom of the bottle. This is to secure perfect ventilation as the air which enters by (4) is liberated at the other end of the bottle. 3. The cork should be impregnated with paraffin and fit perfectly air tight. 4. Short piece of glass tubing 6 to 10 mm. in diameter which is connected to the tube extending to the outside of the room.

surroundings because: (1) The amount of oxygen is continually decreasing. (2) The amount of carbon dioxide is continually increasing. (3) The heat of the animal raises the temperature of the chamber. (4) The moisture in the chamber is continually increased by the animal. (5) The poisonous products exhaled by the animal may affect it.

Lavoissier first improved this method by absorbing the carbon dioxide as fast as it was formed and supplying fresh oxygen in its place and later by continually supplying fresh air to the cage and withdrawing the respired air. The majority of workers have followed this plan and have maintained a constant current of air by ventilating apparatus of some form.

Whatever general form of apparatus may be used, the carbon dioxide can be determined by (1) KOH or NaOH solution in an anthracometer (volumetric). (2) By KOH or NaOH solution in a Geissler bulb (gravimetric). (3) By passing the air over pumice stone saturated with the same solution. (4) By precipitation with $\text{Ba}(\text{OH})_2$, and then by filtering, drying and weigh-

ing the precipitate, or by determining the amount of oxalic acid necessary to neutralize this solution.

The oxygen can be determined by: (1) Absorption with potassium pyrogallate and (a) by use of a large bulb (weighing before and after), (gravimetric), or (b) by taking samples of air in burettes and allowing the solution of potassium pyrogallate to run in from below (volumetric). (2) By exploding with electricity in an endiometer. (3) By oxidation of phosphorus in samples of air.

The moisture can be withdrawn from the air (1) by passing it through flasks or tubes containing concentrated H_2SO_4 or flasks containing pumice stone saturated with the same (weighing before and after). (2) By passing the air through these tubes containing desiccated CaCl_2 (weighing before and after).

The constant current of air through any form of apparatus is usually maintained by suction, either by use of water or mercury.

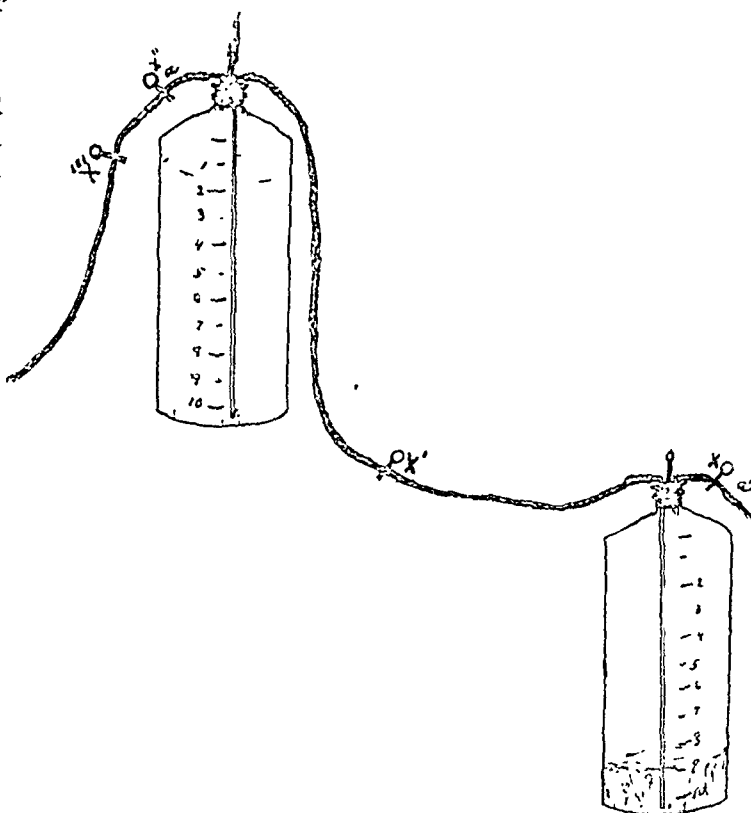


Fig. 2.—Showing the arrangement of the ventilating apparatus. The bottles equipped with air-tight corks and tubes as shown may be alternately raised and lowered by a strong cord running over a pulley attached to the ceiling. The siphon drawing off the water from the upper bottle lowers the pressure in it and draws a current of air through the apparatus. The amount of air supplied to the animal may be measured by noting the amount of water which traverses the siphon and may be varied by varying the height of the bottle. In alternating the position of the bottles one has only to lower the upper bottle and change the hook to the other bottle. The apparatus tube (a) should be changed to (a') after clamping (x') (x'') (x'''). In order to construct (a) (a') so the clamps can be easily applied, it is necessary to connect a short piece of glass tubing to the glass tube which perforates the cork. This connection is made with a rubber tube on which the clamps are applied.

After performing a number of experiments we found the following method to be the most accurate and best suited for our work:

(a) For an animal cage we used a large mouthed glass jar, prepared for use as shown in Fig. 1.

(b) We maintained a constant stream of fresh air from outside of the room by a ventilating apparatus constructed as shown in Fig. 2.

(c) The water was collected by passing the air through tubes filled with desiccated CaCl_2 (weighing before and after). See Fig. 3.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee.

(d) The CO_2 was determined by passing the air current through a Geissler bulb containing a strong solution of KOH , to which is attached a small CaCl_2 tube for catching the moisture derived from KOH by the air current. This Geissler bulb and its attached CaCl_2 tube is placed in the apparatus beyond the large CaCl_2 tubes which absorb the moisture from the animal cage. It is weighed before and after the experiment. See Fig. 3.

In order to be certain that all of the CO_2 was absorbed by the KOH a flask containing $\text{Ba}(\text{OH})_2$ was attached to the CaCl_2 tube of the Geissler bulb so that the $\text{Ba}(\text{OH})_2$ would at once show a precipitate should any CO_2 not be absorbed in the Geissler bulb. See Fig. 3.

(e) The oxygen is determined by a volumetric method, using two or more gas burettes and a solution of potassium pyrogallate. See Fig. 4.

To determine the amount of oxygen which the animal consumes, samples of air are analyzed from each bottle of air which passed through the animal cage. The amount of oxygen in normal air is determined by analyzing samples of air from the bottles which ventilate the normal air apparatus.

In performing these analyses the greatest caution is necessary. The solution which gives the most accurate results is composed of two parts of 25 per cent. KOH and one part of 5 per cent. pyrogallate acid. These two constituents should be mixed in the pressure tube (B) Fig. 4, just before the analysis is made. To collect samples of air for analysis one first fills the gas burette with water by suction. Connection is then made, by a

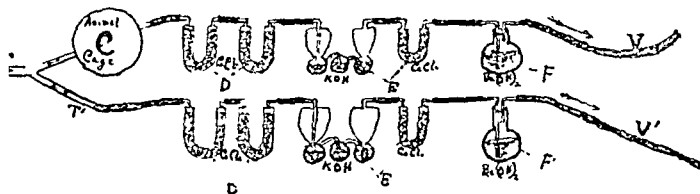


Fig. 3.—C. Animal cage explained in Fig. 1. D. Calcium chloride tubes for collecting the moisture from animal cage. E. Geissler bulb, the bulbs of which are one-half full of 85 per cent. KOH , and to which is attached a small CaCl_2 tube for retaining the moisture derived from the KOH by the air current. F. Containing $\text{Ba}(\text{OH})_2$ for detecting CO_2 which might not be absorbed in E. T. Tube which extends through the window to external air. T'. Tube which conducts part of the current to normal air apparatus. V. Connected with ventilating apparatus for animal cage. V'. Connected with ventilating apparatus for normal air.

rubber tube, with *a* from the top of the gas burette (A Fig. 4 to *a* Fig. 2). The stopcocks of the burette are turned so that the water in it escapes into the cup, as shown in Fig. 4, its place being taken by the respired air from the ventilating apparatus. The stopcocks are now turned so that no air can escape from the burette. The rubber tube of the pressure tube which has been filled with the potassium pyrogallate solution and previously freed from air is now connected to the lower end of the gas burette. See position 2, Fig. 4. If the three-way stopcock in the lower end of the gas burette (A) has been properly turned the solution from the pressure tube will escape from the end of the stopcock into the cup, as shown in position 2, Fig. 4. A small amount of the solution should be allowed to escape for the purpose of expelling bubbles of air which might have gained entrance to the lower end of the burette while connection was being made with the pressure tube. When all the air has escaped at the end of the three-way stopcock, it is turned one-half a revolution. If this has been properly done the solution will now run into the burette, coming in contact with the air to be analyzed. The pressure tube should now be elevated as high as the

connecting rubber tube will admit and the potassium pyrogallate solution allowed to run into the burette (A). The clamp on the correcting tube should now be applied to it close to the lower end of the burette.

This operation made positive pressure in the burette, thereby causing a more rapid absorption of the oxygen. The burette should now be taken by the experimenter and its ends alternately raised and lowered. At frequent intervals he should loosen the clamp on the connecting rubber tube, and raise the pressure tube, thus permitting potassium pyrogallate solution to take the place of the oxygen as it is absorbed. This procedure should continue ten minutes, after which time the clamp on the connecting rubber tube should be loosened. The burette and its pressure tube should be allowed to remain ten minutes longer, at the end of which time the solution in the burette should be brought to a level with the solution in the pressure tube by elevating or lowering the tube. This causes the air in the burette to be under the atmospheric pressure existing at that time. The reading for the amount of oxygen is now taken.

To calculate the amount of oxygen consumed by the animal, one subtracts the amount of oxygen found in the

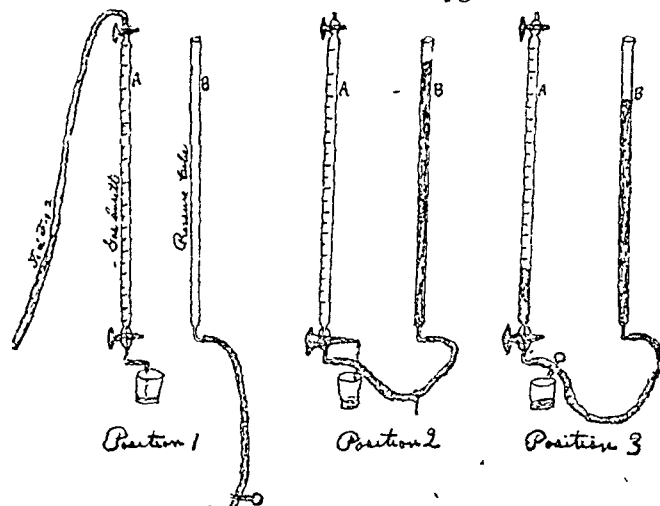


Fig. 4.—Position of gas burettes during analysis of air. Attach a tube from the top of the gas burette (A) to the ventilating apparatus at *a* (see Fig. 2) to catch air which has passed through the animal cage and which is escaping from *a*.

respired air from that found in normal air. At least two samples should be analyzed from each ten liters of respired air, the average being used to obtain the result.

In withdrawing samples of respired air, care must be taken not to release the clamp at *a* until positive pressure exists in that bottle.

In operating the ventilating apparatus care must be taken to clamp *x*, *x'*, *x''* when the position of the bottle is to be changed, so that the respired air will not be contaminated by normal air which would pass into it on account of negative pressure which exists in that bottle. It also prevents the KOH in the Geissler bulb from being forced back into the CaCl_2 tubes on account of a slight negative pressure existing in the apparatus between the Geissler bulb and the water in the elevated bottle of the respiratory apparatus. This likewise prevents the water from flowing from one bottle of the respiratory apparatus to the other, causing a change of pressure, which is not desired until all connections are made for the change of position of the bottles.

OBSERVATIONS.

On account of the size of our animal cage, small animals, guinea-pigs, mice, and small rabbits, were used

in the experiments. The guinea-pigs and mice were full grown and well nourished. The rabbits were not full grown, but were in good condition.

In comparing tubercular animals with normal animals care has been taken to secure animals as near as possible of the same age. In this case the rabbits were of the same litter. The guinea-pigs were adults and similar in weight at the time of inoculation. In all cases the most virulent sputum which could be obtained was used and postmortem examination performed on the animals

TABLE 1.—Showing the amount of oxygen consumed, CO₂ exhaled, respiratory quotient, and the influence of feeding on the same in normal animals.

Date, 1899	Animal.	Weight Grams.	Length of Experiments, hr. m.	Oxygen Consumed, c.c.	CO ₂ Exhaled, c.c.	R. Q.	Time of Feeding.
June 9	Rabbit, 1	370	1	118	426	95.0	Half hour before.
12	" 1	372	1	595	353	88.7	One hour before.
13	" 1	380	1	501	406	810	"
14	" 2	413	1 50	932	767	805	Day before.
15	" 2	413	1 35	900	670	711	"
16	White mouse, 1 .	12	1 20	52	58	960	Access to food.
19	Rabbit, 3	293	1 30	522	181	927	Two hours before.
20	White mouse, 1 .	11	2 10	74	72	968	Access to food.
21	" 1	10	3	133	111	837	"
21	Rabbit, 4	470	1 30	500	493	986	Just before.
27	" 4	467	1 20	593	553	932	Half hour before.
28	" 5	249	1 10	329	270	813	Access to food.
29	" 5	233	1 20	305	285	931	Immediately before.
30	Guinea-pig, 1 . .	611	1 15	386	170	802	Access to food.
July 1	" 2	371	1	412	383	866	"
5	Puppy	375	50	288	210	870	"
26	Rabbit, 6	478	1	481	403	830	"
27	" 6	480	1	459	418	910	One hour before.
Dec. 2	" 7	808	1	891	767	847	Day before.
3	" 7	814	1	927	875	870	"
4	" 7	851	1	1134	966	851	"
4	" 8	703	1 20	585	511	878	Five hours before.
26	Guinea-pig, 3 . .	616	1	765	571	746	Day before.
27	" 3	576	2	1364	1112	720	Two days before.
30	" 3	527	1	623	570	910	Half hour before.

showed that the progress and results of the infection were the usual ones.

Tubercular rabbit 3 was inoculated June 2 and died July 27. Tubercular rabbit 6 was inoculated July 1 and died August 2. Tubercular rabbit 7 was inoculated November 17 and died December 10. Tubercular guinea-pig 1 was inoculated December 11 and died January 17.

RESULTS.

1. If the reader will make a careful study of General Table 1, he will find, in the column marked R. Q., the

TABLE 2.—Showing the amount of oxygen consumed, CO₂ exhaled, respiratory quotient, and the influence of feeding on the same in tubercular animals.

Date, 1899	Animal.	Weight Grams.	Length of Experiments, hr. m.	Oxygen Consumed, c.c.	CO ₂ Exhaled, c.c.	R. Q.	Time of Feeding.
July 7	Rabbit, 3	429	1 20	401	353	972	Just before.
12	" 3	348	1 20	501	458	916	Half hour before.
13	" 3	327	1	310	330	970	One hour before.
14	" 3	393	1	255	271	948	Just before.
18	" 6	293	55	264	214	811	Day before.
19	" 6	282	1	246	181	735	"
Dec. 1	" 7	832	1	765	637	834	"
1	" 7	789	1	608	566	930	"
26	Guinea-pig, 1 . .	457	1	612	472	771	"
27	" 1	425	2	969	700	722	Two days before.
30	" 1	412	1	473	417	945	One and one-half hrs. before.

respiratory quotient for all normal animals experimented on. He will note that the range of variation of the respiratory quotient is very considerable, the lowest being .730 and the highest being .986, thus representing almost the complete recognized range of variation of normal animals as influenced by feeding. Note that the lowest respiratory quotient was shown by the animal experimented on December 27; note also that this animal had had nothing to eat for two days. This

result is in harmony with the experiments of others upon fasting animals. A study of the table, with special reference to the time of feeding, will reveal the fact that the lower values of the respiratory quotients uniformly occur when the animal has been fed some time before the experiment. The highest value shown was in the rabbit experimented on June 24. This animal had eaten just before the experiment began, so that the one hour and thirty minutes devoted to the experiment represented the time during which the digestive process was most active. The other higher values shown will be found in those animals that had eaten just before the experiment or in those animals which had access to food constantly.

It is a matter of common knowledge that the character of the food has much to do with the value of the respiratory quotient. In herbivorous animals the respiratory quotient may reach one as its highest limit. The reason for this is evident, if we think of the chemical formula for any typical carbohydrate. The oxygen and hydrogen have to each other quantitative relations shown in water, and will require no further oxygen during the combustion or respiratory process. The carbon will form just as many molecules of carbon dioxide as there are molecules of oxygen required in the combustion or the respiration. It must be evident from this that the respiratory quotient arising from the oxidation of carbohydrate within the tissues of the living animal would be the same as the combustion quotient of the same substance when burned in a retort.

The similar study of typical foods will reveal the fact that the combustion quotient is equal to the respiratory quotient for fats but not for proteids. The reason for this is that fats undergo complete oxidation within the body, but proteids do not. The combustion quotient for proteids will then be higher than the respiratory quotient. The grams calorie represented in a proteid is 5,650 per gram of desiccated proteid. The animal body, however, is able to get from this proteid only about 4,000 grams calorie of energy. The difference (1,650) represents the relative difference between the combustion quotient and the respiratory quotient for proteids. The respiratory quotient in animals nourished wholly by proteids varies between .75 and .85. In fats the respiratory quotient is the same as the combustion quotient. The small proportion of oxygen, as compared with the carbon and hydrogen in the fat molecule, reduces the respiratory quotient for this foodstuff to about .7. It has usually been supposed by physiologists that the character of the nutriment, that is whether carbohydrate, proteid or fat predominated, would control very largely the value of the respiratory quotient.

The animals experimented on in this research were fed on carbohydrates exclusively, the rabbit eating cabbage leaves and carrots, while the guinea-pig and mice lived on cereals. The variation of the respiratory quotient noted in column R. Q., Table 1, depends, then, not on the character of the food, but on some other factor. The attention of the reader has been called above to the fact that this variable factor is nothing else than the variation of time of feeding. It may not be apparent at first how the difference in the time of feeding can thus modify the respiratory quotient, but we have only to remember that the animal begins, after a few hours of fasting, to consume his own fat and the circulating proteid of his blood to realize that within a few hours after each meal the herbivorous animal becomes, in a sense, a consumer of proteid and fat.

In a further examination of the observations it becomes necessary to reduce the data to common standards in order to compare with each other things which are strictly comparable. The first step is to express (Tables 3 and 4) the amount of gas exchange per gram animal per hour, Table 3 showing the normal and Table 4 the tubercular animals. Note that Table 3 gives the standardized data of Table 1, while Table 4 gives the standardized data of Table 2.

2. Relative to the amount of oxygen consumed and the carbon dioxid exhaled by animals under observation,

TABLE 3.—Showing the amount (cubic centimeters) per gram animal per hour, of oxygen consumed and CO₂ exhaled by normal animals.

Date, 1899	Animal.	Oxygen Consumed, c.c.	CO ₂ Exhaled, c.c.	Time of Feeding.
June 9	Rabbit, 1	1.21	1.15	Half hour before.
12	" 1	1.07	.95	One hour before.
13	" 1	1.32	1.07	" "
14	" 2	1.17	.94	Day before.
15	" 2	1.05	.80	" "
16	White mouse, 1	3.25	3.51	Access to food.
19	Rabbit, 3	1.13	1.10	Two hours before.
20	White mouse, 1	3.10	3.02	Access to food.
21	" 1	4.43	3.80	" "
24	Rabbit, 4	.71	.70	Just before.
27	" 4	.95	.883	One-half hour before.
28	" 5	1.112	.904	Access to food.
29	" 5	.951	.904	Just before.
30	Guinea-pig, 1	.766	.615	Access to food.
July 1	" 2	1.19	1.03	" "
5	Puppy, ...	.94	.76	" "
26	Rabbit, 6	1.01	.83	" "
27	" 6	.95	.87	One hour before.
Dec. 2	" 7	1.12	.95	Day before.
3	" 7	1.11	.99	" "
4	" 7	1.33	1.13	" "
4	" 8	.83	.73	Five hours before.
25	Guinea-pig, 3	1.240	.920	Day before.
27	" 3	1.357	.991	Two days before.
30	" 3	1.182	1.080	Half hour before.

it is interesting to note (see Tables 3 and 5) that the white mouse consumed nearly or quite three times as much oxygen and exhaled three times as much carbon dioxid as did the other animals. The reason for this seems to be that the small animals, and this is true as well of small birds as of small mammals, present larger surface to the atmosphere in comparison with the bulk of the animal than is the case with larger birds and animals. This seems to account for the fact

TABLE 4.—Showing the amount (cubic centimeters) per gram animal per hour, of oxygen consumed and CO₂ exhaled by tubercular animals.

Date, 1899	Animals.	Oxygen Consumed, c.c.	CO Exhaled, c.c.	Time of Feeding.
July 7	Rabbit, 3	.940	.820	Just before.
12	" 3	1.079	.980	One hour before.
13	" 3	1.030	1.000	" "
14	" 6	.900	.730	Day before.
19	" 3	.970	.920	Just before.
19	" 6	.872	.680	Day before.
Dec. 1	" 7	.919	.768	" "
1	" 7	.770	.717	" "
18	Guinea-pig, 1	1.359	1.030	" "
27	" 1	1.140	.832	Two days before.
30	" 1	1.148	1.084	One and one-half hrs. before.

that the respiratory processes are more rapid in the small than in the larger ones.

Attention has been called above to the fact that the time of feeding is a most important element in determining the respiratory quotient. It becomes necessary, therefore, to eliminate the influence of this factor by comparing with each other only observations which represent practically constant conditions with respect to this factor. Table 5 shows in parallel columns the normal animals, divided into two classes, (1) those which had been fed immediately before the experiment, and (2) those which had been fed long before the experiment.

Table 6 shows the same for tubercular animals. Note that the data of these tables represent simply the averages of strictly similar experiments on animals of the same species, as combined from Tables 3 and 4 respectively.

A study of Tables 5 and 6 makes it evident that the respiratory quotient of tubercular rabbits which had just been fed is greater than is the respiratory quotient of normal rabbits under the same conditions. The same is true when we consider the result with guinea-pigs. If we examine the respiratory quotient in those normal and tubercular animals which have been fed long before the experiment we must reach the same conclusion.

4. Let us now examine the result with reference to the amount of oxygen consumed and the amount of

TABLE 5.—Showing the influence of feeding on the amount of oxygen consumed and CO₂ exhaled, per gram animal, per hour, and the respiratory quotient in normal animals.

Animals Fed Two Hours or Less Before Experiments.					Animals Fed Twelve Hours or More Before Experiments.				
Animal.	Number of Experiments.	Oxygen Consumed, c.c.	CO ₂ Exhaled, c.c.	R. Q.	Animal.	Number of Experiments.	Oxygen Consumed, c.c.	CO ₂ Exhaled, c.c.	R. Q.
Rabbit . . .	8	1.046	.951	.917	Rabbit . . .	5	1.162	.956	.823
Guinea-pig	1	1.182	1.080	.910	Guinea-pig	2	1.298	.995	.738

carbon dioxid exhaled, leaving out of consideration the respiratory quotient.

While fasting, the tubercular rabbit consumed 60 per cent. as much O and exhaled 71 per cent. as much CO₂ as the normal rabbit under the same circumstances. After the consumption of food it consumed 82 per cent. as much O and exhaled 85 per cent. as much CO₂ as the normal rabbit under the same circumstances. This shows:

(a) That during all circumstances as to feeding, the tubercular animal consumes relatively less O and exhales relatively more CO₂ than the normal animal under the same circumstances. Since tuberculosis is a disease in which the animal is continually losing weight, a part of the loss of weight will probably come from the lungs in the form of CO₂ and not so much oxygen will

TABLE 6.—Showing the influence of feeding on the amount of oxygen consumed and CO₂ exhaled, per gram animal, per hour, and respiratory quotient in tubercular animals.

Animals Fed Two Hours or Less Before Experiments.					Animals Fed Twelve Hours or More Before Experiments.				
Animal.	Number of Experiments.	Oxygen Consumed, c.c.	CO ₂ Exhaled, c.c.	R. Q.	Animal.	Number of Experiments.	Oxygen Consumed, c.c.	CO ₂ Exhaled, c.c.	R. Q.
Rabbit . . .	4	1.002	.930	.926	Rabbit . . .	4	.865	.723	.827
Guinea-pig	1	1.148	1.031	.945	Guinea-pig	2	1.239	.956	.746

be required to support the metabolism of an animal that consumes less food and is less active than a normal animal.

(b) During the periods of fasting the tubercular animal consumes less O than the normal animal under the same circumstances. This indicates that the metabolism in the tubercular animal is less than it is in the normal animal. This, from the nature of the effect of the disease, we believe to be true.

(c) The rate of consumption of oxygen by the tubercular animal is not as constant as it is by the normal animal.

SUMMARY.

1. Time of feeding causes the greatest fluctuation of the respiratory quotient. Under favorable physical conditions it may rise to nearly 100 after the consumption of food, and may fall to about 70 during periods of fasting.

2. The respiratory interchange of gases is very much greater per gram animal per hour for the very small animals than for the larger ones.

3. Tubercular animals consume relatively less oxygen and exhale relatively more carbon dioxide than do normal animals under similar circumstances.

4. The respiratory quotient is raised under the influence of tuberculosis.

DISCUSSION

ON THE PAPER OF DR. ADERHOLD AND HALL.

DR. LOUIS C. AGER, Brooklyn, N. Y.—Could the decrease in the volume of oxygen absorbed by a tuberculous rabbit be accounted for by a decrease in the area of absorbing lung tissue? Would a rabbit in the early stages of pulmonary tuberculosis, or with tuberculosis of some other part of the body absorb less oxygen?

DR. CHARLES T. MCCLINTOCK, Detroit—Did Dr. Hall notice any difference in the absorption of oxygen according to the moisture in the air? It is well known that tuberculous patients breathe badly on moist days.

DR. LEO LOEB, Chicago—Did the temperature make any difference in the experiments performed?

DR. F. F. WESBROOK, Minneapolis—I should like to ask Dr. Hall if the infection of his animals was produced by subcutaneous inoculation of the tuberculous sputum and, if so, whether any steps were taken to eliminate possible variations which might result from pyogenic and other bacteria which were in association with the tubercle bacilli. This variation would, of course, be more marked in some cases than in others. For example, if streptococci were present in the sputum inoculated, the effect on rabbits and mice would be much more severe than on guinea-pigs. The site of inoculation might have an influence as well.

I should like to inquire, also, whether concurrent determinations of the nitrogen output were made and whether the loss of body weight mentioned could be accounted for by the changes in the operation of the respiratory mechanism.

I wish to congratulate the authors on their method of employing a second or control tube to gauge the amount of carbonic acid and moisture in the air supplied to the animal, whereby the objectionable feature involved in furnishing them with a perfectly dry air was done away with.

In 1895, in work along the same lines done in collaboration with Dr. Lorrain-Smith, we supplied our animals with air from which both moisture and carbonic acid had been removed. This always seemed to me too artificial and to be the source of possible errors in deductions.

DR. W. S. HALL, Chicago—First, in regard to the amount of oxygen consumed in relation to the amount of lung tissue: these animals only lived a few weeks, and the lungs did not seem to be particularly affected. It was a general tuberculosis, and there seemed to be no decrease in the amount of functional lung tissue.

Second, in answer to Dr. Loeb's question, the temperature was not taken throughout the whole period, but was taken on a number of occasions, and on all of these occasions it was slightly above normal in the tubercular animals.

Third, regarding the humidity: it is a part of the laboratory protocol furnished us weekly by the United States Weather Bureau (Auditorium station) and also determined by our air analysis, but we took no account of this in writing up our experiments. It has, however, not escaped our attention. Dr. Aderhold did not think, from a study of the laboratory notes, that the humidity was of sufficient importance to record it in the published tables. It might, however, add interest to these tables, in excluding humidity as an active factor, in modifying the respiratory quotient, if for no other reason.

Fourth, as to the difference in infection, as spoken of by Dr. Wesbrook: the injection was subcutaneous and, naturally, there was more or less mixed infection, but the little streptococcus infection that followed some of these injections was moderate and did not seem to be the cause of the death of any of the animals used in the series of observations. In these animals the disease seemed to run the usual course of tubercular infection, but in one or two cases Dr. Aderhold reported an animal dying in a shorter time, and evidently of mixed infection, and such animals were not included in the series of observations.

DR. LOUIS C. AGER, Brooklyn—As long as there was only slight destruction of lung tissue, did you form any conclusions as to the cause of lack of oxygen absorption? Was it due to decrease of hemoglobin?

DR. W. S. HALL, Chicago—The relation of the two conditions, loss of weight and decrease of consumption of oxygen, is the puzzling point of the problem. I wish I could answer this question as to how there can be a loss of tissue with a decreased oxygen consumption. If there was as much food taken in during the course of the tubercular infection an increase of oxygen consumption would be necessary to oxidize this food and carry it out of the body. I am inclined to think we could not get a loss of weight and wasting of the tissues, together with a decreased oxygen consumption, unless we had a decreased alimentation. We notice that in tubercular cases this is true, and an evident loss of appetite was observed in these animals. I think this is the only way we can account for it.

THE INTRACELLULAR TOXINS OF SOME OF THE PATHOGENIC BACTERIA.*

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Two years ago, at a meeting of this Association at Atlantic City, and before this Section, I had the privilege of describing some experiments made by some of my students and myself on intracellular toxins. I desire in this paper to make some additional statements on this subject.

By means of the large incubating tanks which I described in a paper read before the Association of American Physicians in 1901, and which are figured in the transactions of that society, I have been able to obtain both pathogenic and non-pathogenic bacteria in large amounts absolutely free from the constituents of the culture medium on which the germs have been grown. In this way I have studied the cell substance of the colon bacillus, the bacilli of diphtheria and anthrax, the *Micrococcus prodigiosus*, and the lemon and orange sarcines. I have found that the cell substance of all of these organisms is more or less toxic to guinea-pigs and rabbits. The toxicity varies with the virulence of the culture employed. The cell substance of the colon bacillus after extraction with alcohol and ether and complete desiccation in vacuo kills guinea-pigs when injected into them either intraperitoneally or subcutaneously in proportions of 1 part of the poison to 45,000 parts of body weight. For rabbits this substance is somewhat more toxic. By heating the cell substance of the colon bacillus for a period not exceeding 30 minutes at a temperature of the water bath with a 1 per cent., by weight, solution of sulphuric acid in water we have been able to split off a soluble toxin which, when injected into animals, causes symptoms and lesions identical with those obtained after injection of the unbroken cell.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. Alfred Stengel, L. Hektoen and Frank B. Wynn.

The toxin thus split off seems to be of relatively simple composition compared with that of the whole cell substance, but so far I have not been able to obtain it in a sufficiently pure state to justify an ultimate analysis. The probabilities are that this split product which has this specific toxic action belongs to the class of protomins which were discovered by Miescher and which have been subsequently extensively investigated by Kossel and his students. However, I may note the fact that the toxins obtained in my laboratory by means of dilute sulphuric acid and heat do not give a satisfactory biuret reaction, while protomins of Miescher and Kossel respond promptly to this test. We have also found that the part of the cell substance which remains after hydrolysis with dilute sulphuric acid is still toxic, but much less so than the whole cell substance, or that part split off by the acid. Theoretically I infer from this that the molecule of the colon bacillus contains two or more toxic side chains, only one of which is split off by dilute sulphuric acid, while the other toxic side chain remains unaffected and gives to the residue after extraction with dilute sulphuric acid its poisonous properties.

Probably the most interesting piece of work done in my laboratory during the past two years is that on the toxin of the anthrax bacillus. We have obtained the cell substance of this organism in large quantity and have found that the dead germ substance, when mixed with water and thoroughly sterilized and injected intra-abdominally into guinea-pigs in amounts of from 200 to 300 mg., causes death, and that anthrax lesions are found. By heating the germ substance with 1 per cent., by weight, of sulphuric acid in the autoclave at 110 for 10 minutes, complete sterilization is secured and the acid splits off a substance which, after filtration, is precipitated by pouring the filtrate into three volumes of absolute alcohol. This precipitate when collected, thoroughly washed until every trace of acid has disappeared, dried in vacuo, and pulverized, forms a snow white powder, which is soluble in water rendered feebly alkaline with sodium bicarbonate. This powder, when thus dissolved and injected intra-abdominally into guinea-pigs of from 200 to 300 grams weight, in amounts of 50 mgs. or more, causes death with lesions similar to, if not identical with, those observed after death from typical anthrax. It seems to me that this must be considered the specific toxin of anthrax. All of the theories concerning the *modus operandi* of germs in causing disease have been applied to anthrax, inasmuch as this has been considered the typical infectious disease. Various attempts have been made to find the specific toxin of this disease.

A review of some of the work that has been done along this line may be of interest in this connection. As early as 1877 Pasteur filtered cultures of anthrax through porcelain and injected the germ-free filtrate into animals without effect, thus showing that this organism does not elaborate a soluble toxin. Some years later Hoffa reported that he had obtained from pure cultures of the anthrax bacillus small quantities of a ptomain which, when injected under the skin of animals, produced the symptoms of the disease and death. At first this substance caused increased respiration and action of the heart. Subsequently the respirations became deep, slow and irregular. The temperature fell below the normal, the pupils were dilated, and a bloody diarrhea set in. On section the heart was found to be contracted, the blood dark, and ecchymoses were observed on the pericardium and peritoneum. Hoffa called

this poison anthracin, and later he reported that he had isolated it from the bodies of animals dead with anthrax. These results could not be considered satisfactory. Moreover, several investigators have repeated Hoffa's experiments with negative results.

In 1889 Hankin prepared from cultures of the *Bacillus anthracis* an albumose which, when employed in comparatively large amount, proved fatal to animals, and when used in very small quantity gave immunity against subsequent inoculations of the living germ. Subsequent investigations have failed to confirm Hankin's results. Brieger and Fraenkel reported that they had found a toxalbumin in animals dead from anthrax. In their experiments the liver, spleen, lungs, and kidneys of animals recently dead from this disease were finely divided and rubbed up with water. This emulsion was allowed to stand in a refrigerator for 12 hours, when it was passed through a Chamberland filter and the toxalbumin precipitated from the filtrate with absolute alcohol. Conradi has carefully repeated Brieger and Fraenkel's work with negative results.

Martin grew the anthrax bacillus for from 10 to 15 days in an alkaline albuminate from blood serum, then filtered through porcelain, and obtained from the filtrate the following products: 1. Protoalbumose and deuteroalbumose, and a trace of peptone, all of which substances behave like similar bodies prepared by peptic digestion. 2. An alkaloid. 3. Small quantities of leucin and tyrosin. The most characteristic property of the albumoses obtained by Martin is that their solutions are strongly alkaline, and the alkalinity is not removed by treatment with alcohol, benzol, chloroform, or ether, or by dialysis. The alkaloid was found to be soluble in water, alcohol and amylic alcohol, but insoluble in chloroform, ether and benzol. Its solutions were strongly alkaline and it formed with acids crystalline salts. The mixed albumoses were found to be poisonous only in considerable doses, 0.3 of a gram being required to kill a mouse of 22 grams weight when injected subcutaneously. Smaller doses caused local edema and a somnolent condition, from which the animal recovered. Larger doses produced more extensive edema and the somnolence deepened into coma and terminated in death. The alkaloidal body reported by Martin is apparently not identical with that obtained by Hoffa. Marmier grew the anthrax bacillus in a peptone culture medium and reported that he had obtained a toxin from sterilized cultures of these growths by precipitation with ammonium sulphate.

The most recent work on the anthrax toxin, before that done in my own laboratory, was reported in a very exhaustive paper in the *Zeitschrift für Hygiene* by Conradi. This investigator reviews extensively the literature of the subject, and adds experiments of his own. From all the evidence that he could obtain at that time, Conradi came to the conclusion that the anthrax bacillus does not produce either an extracellular or intracellular toxin. If the work in my laboratory be confirmed, it will show that the anthrax toxin is a constituent of the bacterial cell, from which it can not be removed except by certain chemical disintegrations of the cell substance. A few experiments made in my laboratory indicate that the part of the cell which remains after extracting the above mentioned toxin with dilute sulphuric acid is also toxic. However, the extent to which it is toxic has not yet been determined. Many interesting questions arise in connection with this work, and I am tempted to enter into the discussion of some of them, but will forbear until I have amplified my experimental researches.

Our work with the diphtheria intracellular toxin is exceedingly interesting. From the experiments that we have made we conclude that the intracellular toxin of diphtheria is not identical with the soluble toxin. Commercial diphtheria antitoxin protects animals against the soluble diphtheria toxin, but fails to protect against the intracellular toxin. This offers, apparently, a plausible explanation for the fact which has been observed by others that natural immunity to diphtheria toxin may be possessed by animals which are not immune to diphtheria infection.

The cell substance of the *Micrococcus prodigiosus* and of the lemon and yellow sarcines are toxic in varying amounts, depending largely on the extent to which the cells are purified from the mucilaginous substance surrounding them in the culture medium.

The full paper, of which this is an abstract, has been prepared for the Rockefeller Institute, and will doubtless be published in the reports of that organization.

ANGIOSARCOMA OF THE LIVER.

REPORT OF A CASE.*

J. C. COOK, M.D.
CHICAGO.

NARRATION OF CASE.

A child was presented at my clinic, Aug. 5, 1901, aged 3½ years; female. The first indication to the mother of any trouble was noted five weeks previous, when she observed a small tumor, or hard lump, in the right iliac region and a week later a similar growth was noticed in the corresponding location in the left side. Both grew until they met. About this time the child vomited some, but this did not persist. The bowels became constipated and the abdomen distended, and she began to lose weight.

Examination.—The following clinical findings were noted: temperature normal, pulse 110 to 120. Urinary examination revealed nothing. The child presented a markedly distended abdomen, measuring twenty-five inches at its greatest circumference, which increased to twenty-seven inches August 28. No blood had escaped from any of the cavities; no history of malignant disease could be obtained; white blood corpuscles 12,000, hemoglobin 50 per cent., red blood corpuscles 3,600,000. The child presented an emaciated appearance and wore an anxious expression.

Operation.—August 6 an exploratory incision was made by Dr. Allen B. Kanavel which revealed a tumor filling the entire abdominal cavity, grayish white in appearance, soft and friable, evidently malignant in character, that could not be separated from the ovaries, uterus or kidneys. The latter organ was believed to be its origin because of the relative frequency with which it is attacked. The laparotomy revealed the absence of fluid in the abdominal cavity. Further operative procedures were abandoned, as it was believed they would not increase the chances of recovery. The abdominal wound was closed and united rapidly.

Subsequent History.—The child was sent home, no change occurring worthy of note except that on August 20 the right leg became edematous. She died on August 28 under a diagnosis of inoperable sarcoma. The entire course from the first symptom to the end was two months.

Autopsy.—I am indebted to Drs. Kanavel, Richter and Springer for the following postmortem report: The body was greatly emaciated, the right leg markedly, and the left leg slightly, edematous. About two quarts of clear serous fluid escaped on opening the abdomen.

The tumor appeared to be both extraperitoneal and intraperitoneal, as if it had grown under the peritoneum to both sides, then had extended up through the mesenteric attachment

in the median line and on the right side, for here the growth was restricted into a sort of neck. Once well up into the mesentery, it expanded and broke through into the peritoneal cavity, growing for the most part down into the pelvis so as to give on palpation early in the course the suggestion that it originated here, the irregularity of its growth leading the mother to find two nodules, one on each side. The two portions of this dumbbell-shaped mass are about the size of a ten-year-old child's head, and it is soft like a child's brain. On cut section pulpy, whitish or bloody areas arise above the surface, the latter being numerous and due to extravasated blood from the numerous newly-formed blood vessels present. Here and there bands of firmer tissue running in every direction serve to bind the mass together, while numerous peritoneal bands on the surface, stretched tight, increase the verrucosity of the lobulated mass. The aorta and vena cava lie behind. Between the two masses were found the kidneys, connected by a fibrinous band giving the appearance of a horseshoe kidney, connected inferiorly by an isthmus of flattened kidney tissue an inch and a half in width and from an eighth to a quarter of an inch in thickness, gradually thickening and widening at each end to unite imperceptibly with the lower pole of each kidney, coming up as high as the pelvis. The upper poles are free. The capsule of the kidney covers, both anteriorly and posteriorly, all of the left and the upper pole of the right, but inferiorly on this kidney it extends out to include the tumor growth which grows by a prolongation from the lower pole, a neck of kidney tissue changing into tumor tissue so gradually that at no place can one say, macroscopically at least, here is kidney tissue and there adjoining is tumor growth. This neck is about one-half inch in diameter and one-half inch long.

The arteries and veins come in from each side to the upper part of the kidney, the vein being superficial. They bifurcate to go dorsally and ventrally to the pelvis of the kidney; then ramify on the isthmus uniting with the corresponding vessels of the opposite side. The ureters are separate below, lying ventrally to the lower pole, and are connected by a communicating branch lying in the kidney tissue along the upper part of the isthmus. They run down between the intra- and extraperitoneal tumors. The kidneys are of normal size and the pelvis is not dilated.

The omentum was filled with metastatic growths varying in size from a pea to a walnut. The same may be said of the iliac mesentery. No other metastases were found either in the organs of the body or in the lymphatic system, bones not being examined. Spleen, heart, liver and pancreas were entirely negative; slight emphysema of lungs. The tumor mass, with kidneys attached, weighed seven pounds.

Says Ziegler: "A sarcoma is a connective tissue tumor in which cellular elements are much more prominent than the intercellular substance. A typical sarcoma, as the name implies from the Greek, is fleshlike in consistency. In appearance it is generally more or less rounded, often enclosed in a capsule, but may be irregular, infiltrating and unencapsulated. Their consistency is soft or hard, according to the number of cells and amount of intercellular substance composing them."

ETIOLOGY OF SARCOMA.

"The frequent occurrence of sarcomata in young persons," says Conheim, "is among the evidences pointing to a congenital origin." Traumatism and inflammation play some part, either in developing a lesion from which it may have an origin, or stimulating a new growth from a latent sarcoma.

No specific form of bacteria has been demonstrated, yet the parasitic theory has many adherents in recent years. Experiments with implantation of the disease in animals have been unsatisfactory. Some relationship has been traced between sarcoma and syphilis (Stengel). The seat of the sarcoma is from pre-existing connective

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee: Drs. Edwin Rosenthal, H. M. McClanahan and Samuel W. Kelley.

tissues and may arise in nearly any organ or structure of the body.

THE VARIETIES.

It is essentially malignant in character and tends to recur after removal. Metastasis occurs through the circulation. The degree of malignancy varies greatly. The small round cell and melanotic varieties are the most dangerous. The exact influence of sarcoma on metabolism is unknown, yet it is a well-established fact that sarcomatous growth is injurious to the general health, as is shown by the marked emaciation, anemia, leucocytosis and the sometimes existing irregular fever. The structure of sarcoma cells is round, cylindrical and spindle-shaped. The spindle-celled sarcomas are harder than the round cell. The round cell variety may be almost entirely composed of spherical cells, large or small in size. These enter into combinations in various ways and are modified by their combinations and the structure in which they are located.

Stengel, in discussing tumors of the kidneys, says that sarcoma is the most frequent malignant tumor. It may occur congenitally or in later life. The multiform character of sarcoma of the kidney suggests an embryonal origin and it is not unlikely that the primitive Wolffian bodies are the starting point of the disease.

The special variety of sarcoma to which the specimen from this case belongs is known as an angiosarcoma, or more correctly "hæmangio sarcoma." In this variety the sarcomatous proliferation begins in the adventitious coat of blood vessels. The tissue of the tumor in typical cases is almost wholly composed of a tangle of vessels whose walls are surrounded by heavy masses of cells which extend even as far as the endothelium. Such a tumor, therefore, is made up essentially of thick-walled cellular tubes which partly follow an independent course and partly unite with other tubes by an anastomosis which gives rise to a complicated mass of twisted and interwoven cords. However, it should be mentioned here that in both endothelium and angiosarcoma the alveolar and tubular structures may be wholly lost in places through the diffused manner in which proliferation takes place. Angiosarcoma occurs in the brain, kidney, testicles, lymphatic glands, breast, skin, bone, thyroid and liver, although it is a very rare occurrence in the two locations last mentioned.

THE RECOGNITION AND PROMPT REMOVAL OF POSTNASAL ADENOIDS IN CHILDREN.*

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PHILADELPHIA.

The importance of the consideration of our subject is evident when we observe the divergent views presented by different authors as to the instruments to be used in operations and the varying ideas as to anesthesia. That the subject is still uppermost in the mind of the specialist is evident from a consideration of this year's programs of the Section on Laryngology and Otology, where three papers out of a total of thirty-three are presented on the growths in the nasopharynx, and of this Section on Diseases of Children, in which three papers out of a total of thirty-nine are devoted to the same subject.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee: Drs. H. M. McClanahan, Edwin Rosenthal and Samuel W. Kelley.

FREQUENCY AND CAUSES.

As to its frequency, opinions of authors are much at variance. Ingals of Chicago reports but 2 per cent. out of ten thousand private chest, throat and nose patients, while Frankenberg reports 59 per cent. in the 158 inmates of the Deaf and Mute Institute at Prague. Some writers incline to believe that adenoid enlargements are not more common in deaf mutes than in the more normal members of the community, and that when they are present they have no causative effect on the deafness. Yet Arslan and others report cases where they have succeeded in restoring the hearing by proper removal of the growths followed by appropriate after-treatment.

We all know that children are peculiarly prone to these growths; that they are apt to arise in the second, third and fourth years; that occasionally they seem to be congenital; that in adults the tendency to proliferation and closure of the lymphoid tissues appears less often, and the disease is much more rare, but yet exists more frequently than is popularly supposed.

I believe that most authors agree that it occurs more often in boys than in girls. I can not say that this has been impressed on me, but I do know that it is a very frequent disease in children, and while I have not thoroughly analyzed my cases, I am sure that in my work I have observed it in over 10 per cent. of all the children I have treated in my private practice, and during one week of May, 1902, I removed adenoids from five children, while there is rarely a week that I do not remove one or more of these growths in my private work.

In regard to constitutional predisposition, most authors agree that there is an hereditary tendency; there are some who do not concur that the lymphatic or scrofulous diathesis has any bearing on the case. There is no question that they are more frequent in the weak, the poorly nourished; those who give evidence of the strumous diathesis. Children who are the victims of scrofula, syphilis, tuberculosis, anemia, chlorosis and chronic malnutrition are most prone to develop these tumors. In addition a very moist climate is a powerful agency in precipitating the condition. In my own experience I can not say that I have ever found these adenoid growths in a child that, to me, seemed the picture of health. It is, however, to be considered that in some few cases it may have originated from some local disorder in the nasopharynx, the resulting ill health being subsequent to the growth.

A factor in proving that the enlargement is usually not a local condition is that in nine cases out of ten the faucial tonsils also are enlarged and diseased. This fact has been noted by numerous writers, among others William Meyer, Morell Mackenzie, H. Lennox Browne and Joseph Gruber. There appears to be a tendency to disease in various other lymphoid structures.

DIAGNOSIS.

As to the method of making the diagnosis, the symptoms observed are usually sufficient—the difficulty of breathing, the mouth breathing, the open lips, the vacant countenance, the loss of memory, the stammering, the poor hearing, the dead, flat, muffled voice, the cough, the pinched wing and flattened bridge of the nose, the flat chest, the general lack of health and vitality, and the enuresis and indigestion, and numerous nervous reflexes, all go to make up a picture which when present can not be mistaken. When the diagnosis is a probable one, but not certain, it can be made fixed and definite by examining the rhinopharyngeal space by means of the index finger of the right hand inserted through the

mouth back of the soft palate. The nature of these growths is simply that of hypertrophies of the normal lymphoid tissue, and containing varying amounts of fibrous and connective tissue. The masses are sometimes single, lobulated, clustered or stalactitic; sometimes soft, again hard or tough; sometimes very friable, again encapsulated; sometimes occupying the vault only, again extending far over to the sides involving the entire rhinopharynx and completely occupying the fossæ of Rosenmüller as well as the eustachian tube orifices. These growths seem to predispose their subjects to numerous diseases. They are constantly troubled with catarrh, always taking cold in the head; they usually develop tonsillar and other throat diseases. They are peculiarly liable to hay fever, bronchitis and pneumonia. They almost always have some insufficiency in the heart's action. They often develop nervous affections, such as enuresis and asthma and even chorea and epilepsy; paroxysmal sneezing is most common. They are very liable to all the acute fevers, such as diphtheria, scarlet fever, measles, etc.

Diseases of the ear follow in many cases; acute inflammation of the middle ear and mastoid is by no means uncommon, and deafness is often present. Friederich explains this as follows:

Any and all diseases of the nose and post-nasal space which are followed by obstruction of the nasal passage lead to passive hyperemia in the mucous membrane, which in turn produces occlusion of the eustachian canal. . . .

The obstructions may be situated in the post-nasal space, and may take the form of hypertrophied pharyngeal tonsils, tumors, syphilis, or tuberculosis occluding the posterior nares. Hence the recognition and removal of any obstacle to nasal respiration should constitute an integral part of every examination and treatment of the ears. There can be no hope of curing the ear affection before the causes which are responsible for the congestion of the mucous membrane have been removed and the permeability of the tube has been restored. If I have included hypertrophy of the pharyngeal tonsils or adenoid vegetations among the diseases which produce hyperemia and swelling of the mucous membrane, with occlusion of the tube by interfering with nasal respiration, it is because I believe the occlusion is due to a general "adenoid habit" of the nose and pharynx, rather than to the direct mechanical intrusion of the pharyngeal tonsil. The "adenoid habit" manifests itself in the rhinoscope image as a hyperplasia of the entire lymphatic ring of Waldeyer; the follicles in the posterior pharyngeal walls and in the longitudinal folds on each side of the pharynx are more numerous, and are intensely red and swollen. Hyperplasia of Rosenmüller's crypts and of the anterior fold of the tube may develop as the manifestation of a general hyperplasia of all the lymphatic elements entering into the formation of the so-called pharyngeal lymphatic ring; hyperplasia of these structures necessarily favors the occlusion of the tube by compressing the orifice.

Disorders of the digestive apparatus are quite the rule; the condition is precipitated by the usually profuse discharge which flows down the posterior wall of the pharynx, most of which finds its way, with children, into the stomach, where it sets up irritation through the processes of fermentation. Another factor seems to be the lack of the usual quantity and even the healthy quality of the buccal saliva. In addition such children are apt to bolt their food because of the lack of nasal breathing preventing thorough and comfortable mastication.

The rhinopharyngeal region is subject to much variation. The bones at the base of the skull which serve as the roof of this space vary much in their growth and development; in some the space is narrow and high, again it may be shallow and broad, or it may be flat, or well

rounded in either of these cases. Its usual appearance is somewhat like a section of a long cone, the apex of the cone being above and arched. Were this invariably so instrumental operations would be much simplified, and would be followed by more uniformly good results. As a matter of fact we never strike two of these cases exactly alike; there are constant variations.

The most serious and the most frequent of these variations is where you find the sides of the rhinopharyngeal walls separated from the central or posterior wall by hard, bony ridges, which in some cases extend up into the extreme upper and anterior terminus of the pharyngeal vault. I should say that in children this peculiarity is observable in perhaps two out of every ten cases, and its presence is a serious interference to instrumental operations, whether by the forceps or the curette, but especially to the former. Not infrequently do we find cases which have been thus operated on where parts of these bony ridges have been torn away, and yet where part of the growth lying down in the hollow between these ridges has not been removed; in other words, necrosis was going on simultaneously with enlargement of the adenoid growth after the operation had been performed and pronounced completed.

These bony ridges are apt to start just above the level of the soft palate and extend usually into the vault, dividing the bony walls into a central and two lateral sections. In other words, there are three sections of a cone arched above.

METHOD OF TREATMENT.

The old, passive, medicinal treatment is nowadays very rarely attempted, but in some measure, of course, it comes into play in every case in the preparation of the patient for operation. The use of cleansing alkaline, antiseptic and astringent washes, and the use of drying and astringent powders, as well as protective or medicinal oils and salves, are all necessary for this purpose, and they may in addition be useful in allaying the symptoms as well as in restoring any lack of confidence the little patient may have in his doctor. It gives each an opportunity to study the other. Such treatment may perhaps occasionally cure a case, but usually it will only improve the symptoms.

Formerly some advised that the only necessity in these cases was to keep the parts clean and give the growth a chance to atrophy and disappear. Now this dependence on faith and cleanliness is not to be advised. It is a relic pure and simple and has no place in present-day treatment. The only conclusion to be reached is to remove the growth at the earliest period practicable, and to do it thoroughly, and to avoid exposing the little patient to any unnecessary risk.

The removal of these growths by electricity has been advised by a number of writers, Burnett and others advising the cautery points, Sajous using the cautery loops or snare, on account of the supposed painlessness and convenience, as well as the almost uniform results. These methods, however, have not been followed by good results and are rarely used.

It is now understood that whatever method is employed it must give assurance of the entire removal of the growth and a reasonable certainty of its non-return.

ANESTHETICS.

Before considering the operations proper, which conform in the main to the foregoing proposition, we should consider for a moment the subject of anesthetics, local and general.

Local anesthetics, such as cocain, holocain and eucain, can be used by application through the nose and throat, and will do much to dull the sensibility of the parts if you can only have the child held perfectly steady; no doubt all the necessary operative procedures could be done without any very serious difficulties. Even the Meyer ring curette or the Gottstein curette, the guillotine, or any of the numerous forceps could be employed without subjecting the child to serious pain if nervous apprehension and fear were not a factor.

As a matter of fact, however, children can not hold well for such serious and menacing operations, and it is because of this lack of control on the part of the child that most of the operators have been driven to use general anesthesia. Now the operators in this field are by no means agreed as to the best and least dangerous anesthetic to use. Many advise chloroform, and as many condemn it. Numerous deaths among these cases have been reported from its use. Ether is advised and used by many, and then once in a while one of our little people takes the long sleep. Bishop uses bromid of ethyl; others find it dangerous. Nitrous oxid and nitrous oxid administered with oxygen is used, but while it is apparently the safest (13 deaths in a record of 750,000 administrations) it has the disadvantages that doctors can not readily administer it, and its effects are so evanescent. The A. C. E. mixture has been employed. It also has numbered its victims in our adenoid operations.

It is a matter of common knowledge that our adenoid tumor patients are peculiarly susceptible in the cardiac region; they are more liable to syncope and death without premonition. It is unfortunately true that while some of these cases are reported, and they are now not an inconsiderable number, yet by far the majority of these results are never put into print, and we have no means of knowing just how serious is the problem that confronts us. I venture to say that if accurate statistics could be obtained general anesthesia in these cases would be almost discarded. Henry Gradle says:

Narcosis makes the operation more formidable and necessitates more assistance. It does not in any way permit a more thorough operation, as most of the relapses which the writer has seen had been operated previously by others, and by himself under anesthesia. The pain in well-arranged operations is not sufficient to necessitate the superfluous risk of an anesthetic. It is only in cases of unruly children from whom active resistance must be expected that narcosis becomes necessary. Narcosis is also preferable when the faucial tonsils are to be excised at the same sitting, as this triple operation is usually too severe a tax on a child's endurance.

METHODS OF OPERATION.

Coming now to consider the various methods of removing these growths, we have first the method of William Meyer, who worked through the nostril with a ring curette while the index finger of the other hand was in the rhinopharyngeal space, the jaws being kept apart by a gag. This has the advantage of an exploring finger constantly present during the operation, the disadvantage being the employment of a general anesthetic.

The operations by the various curettes, such as the Gottstein, Hartman, Beckman and numerous others, are performed under an anesthetic and have the disadvantage that you do not know exactly what you are doing and what you are not doing. You may take away too much or too little; you usually can not completely clean out the fossæ of Rosenmüller, nor can you easily clean out the vault; and again, you may damage the bone and soft structures, especially should the case be one of the anomalous formation of bony longitudinal lateral ridges.

The Gottstein and other curettes are not infrequently broken in these cases. In the *Laryngoscope* (May, 1901) two such cases are reported in the personal work of C. R. Holmes and H. S. Garlick. Unless the parts are examined by the finger after this operation a surgeon can not be certain of having finished the work.

Guillotines, such as those of Schutz and Gradle, have the same disadvantages, except they are not so apt to cause injury, but in most cases they are as ineffective as the curettes, or more so.

Forceps, such as Loewenberg's lateral, or Schutz's anteroposterior, and their numerous modifications, have, in the main, the same objection as the pharyngeal curettes. They, however, have the decided advantage that one can rarely cause quite as much damage with the former. The amount of power which can be, and often is applied to these parts by means of the curette is practically limitless. As above observed, numerous cases are constantly occurring where the curette is broken during the operation. Outside of this advantage all the other disadvantages encountered with the curette pertain in using the various forceps.

THE FINGER NAIL METHOD.

There is another method of which I want to speak more at length; a method which can be used in connection with general anesthesia, or, as I prefer, with local anesthesia. Numerous operators, such as Dalby, Capart, Bezold, Lennox Browne, Guye, Kyle, Newcomb, J. L. Gibson, Beverly Robinson, Pritchard, Baber and others, have used and advised the finger nail, or modification of it, by attaching a sharp steel piece to the index finger, the nail or metal acting in each case as a curette. This method has, of course, the advantage that the operator knows all the time just what he is doing; he can explore all the recesses and remove all the enlarged tissues without injuring any of the normal structures. It has the additional advantage that there is no necessity for the administration of a general anesthetic, and thus the needless jeopardizing of human life is avoided.

According to Sir William Dalby, "The diagnosis of adenoid vegetations can only be made with certainty by digital examination, as this alone gives absolute certainty as to their localization, size, extent, form and resistance." As opposed to this I quote Emil Mayer: "Why should you put your finger up there and simply hurt the child for no reason whatever?" I take it as a self-evident truth that when we have a means of being certain of the presence of such growths and can so readily learn their exact location and their nature, it is wrong to neglect this knowledge and to operate with cutting instruments in the dark, where we can not see what we are doing, and using them with perhaps enough force to do positive damage.

How easy it is, on making this digital examination and learning the condition of this region, to at once, as soon as the pathologic condition is ascertained, to remove the enlarged thickened tissues.

Whenever I suspect the presence of these growths, and have obtained the confidence of my little patient sufficiently, I ask the child to open its mouth, saying that I want to feel something inside, and then, without any display of curettes, forceps, etc., I enter the index finger of the right hand with the nail hardened by dipping it into alcohol or reinforced by my jointed artificial finger nail into the child's mouth and feel the condition of the parts in the nasopharynx and remove at once all diseased and enlarged structures, in many cases finishing the entire operation at once.

METHOD OF OPERATION BY ARTIFICIAL OR NATURAL FINGER NAIL.

In order to indicate to you how quickly and yet how thorough the entire procedure is, I will try and detail to you the various steps in the treatment, examination and operation. Being suspicious of the presence of the thickened adenoid tissues I examine the nares and throat thoroughly but gently, and cleanse both cavities thoroughly with sprays, washes, gargles, etc. When these are thoroughly cleansed I seat the child in a revolving arm chair with a spittoon on patient's left hand, and having thoroughly cleansed my right index finger, and having dipped it in alcohol, I put two or three turns of a one-inch adhesive plaster over the first phalanx of my right index finger, and still further protect it by putting over it two or three turns of a doubled two-inch roller bandage, the end of which is secured by making one turn about the wrist, and as you are about to make a second turn pass the free end under the turn already in position. Standing on the right of the patient I lightly put my left arm about the child's head, holding his head against the lower part of my chest; tilting his head a little forward, I insert the right index finger on the right side of the jaw as far back as possible—not using any gag to keep the jaws apart—and quickly carry it back of the soft palate up into the nasopharyngeal cavity, clearing out all the thickened and overgrown tissues at the vault and posteriorly, in the fossæ of Rosenmüller and at the eustachian tube entrances. While doing this the left arm clasps the child's head more and more firmly while bending it forward over the spittoon. All the thickened tissues found are scraped out until the surfaces feel smooth and natural. In the eustachian region I especially press on the tissues in order to overcome any infiltration or congestion. I do not leave the cavity until I am convinced that all the diseased tissue has been removed, or I am convinced that my own finger nail is not strong enough to cope with the form of tissue present, or there is evidence that the blood and detritus are interfering markedly with the child's breathing—these two latter conditions are very unusual in their occurrence, and should they occur it means that either the same day or the next, if possible, I will again enter the cavity and, if necessary, with a steel finger nail remove every bit of diseased tissue discoverable. The entire operation rarely takes more than a minute, and is usually followed by very little hemorrhage.

AFTER-TREATMENT.

After the operation I clean out the throat and nose carefully, use some soothing ointment in the nose, and advise that liquid albolene or mentholized oil be used in the nose and throat at home. In a few days I examine the region, when, if healing has been perfect, the nasopharynx will feel smooth and soft, and there will be little or no danger of recurrence, and if everything is well I may, perhaps, re-examine after a further period of three or four days, if urged to do so by the parents or the physician, but I do not think this necessary unless there be untoward symptoms.

This operation avoids all dangerous procedures, it causes very little pain and it is done without the dangers of general anesthesia; it requires no gag and no display of instruments. While it is simple it is thorough; it is scientific, inasmuch as we verify each step of our proceedings; it is done with the usual antiseptic precautions, and it does not leave the irregular roughened edges usually present after most operations by other

methods. In other words, it removes all the pieces and does not allow shreds to remain here and there.

As for a recurrence, it is comparatively rare when the method has been thoroughly carried out, as it more effectively removes the last vestige of affected tissues than can be done in any other way.

Personally, I have many times performed the operation by the above method where previously one of the other methods had been tried with general anesthetic, and in not a few have found considerable cicatricial obstructive tissue around the eustachian orifices and occasionally exposed bone, and often remnants of the lymphoid growth.

Whatever the operation employed, it is absolutely necessary in every case to know the exact condition of the rhinopharynx after the operation. I fear that too often this is neglected, and this is responsible for many of the cases that recur early after the operation. This digital examination should never be neglected.

The after-treatment of these cases is simply that of the catarrhal conditions invariably present plus the treatment of the open wound of the nasopharyngeal vault. Mentholized oil and camphor preparations with alkaline washes and antiseptics are the most important.

CONSTITUTIONAL TREATMENT.

As to the constitutional measures to be employed, it is my opinion that their use is never to be neglected. If syphilis, tuberculosis, scrofula, chlorosis, anemia or digestive or nervous disturbances exist in connection with this growth they must receive appropriate and constant attention.

Cod-liver oil and syrup of the iodid of iron will, on the whole, be most frequently employed. In rachitis and some other cases, phosphorus will be of special advantage, while the hypophosphites and arsenic and the chlorid of iron will frequently come into play. Many of our patients will need saline, alkaline and lithia waters. They will all require plenty of exercise and fresh dry air and sunshine. Their skin clothing should be pure wool but light in weight, the weight and thickness of the outer garments being regulated according to the weather. They should have frequent baths, warm or cold, or both, as the exigencies of the case require. The avoidance of all heart sedatives, such as coffee and tea, is a necessity. The food should be plain and nutritious and should be ample in quantity.

CONCLUSIONS.

Summing up the conclusions which we have reached we find:

1. That the disease is a very frequent one, especially among children.
2. That it is relatively much more common among the poorly nourished and those suffering from constitutional and nutritive disturbances, and is rarely observed among the apparently well.
3. That it is usually found in connection with enlarged pharyngeal tonsils.
4. That it is most frequent among deaf mutes.
5. That its presence is usually determined by the symptoms, but digital examination is both easy and certain.
6. That its presence causes most serious local and general derangements.
7. That its presence predisposes to numerous diseases.
8. That the treatment must be operative.
9. That the operation should be done without general anesthesia.

10. That the finger-nail operation is the most thorough, as well as the most safe.

11. That the rhinopharynx must be examined after every operation.

12. That the finger-nail operation is less likely to be followed by recurrence than the more serious operations.

13. That constitutional treatment must be thoroughly instituted in all these cases in order to overcome the predisposing cause of the growth.

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DISCUSSION.

DR. W. C. HOLLOPETER, Philadelphia.—I have always felt this was a subject which had been slighted by the pediatricist. The operation appears to be a cardinal necessity, especially when the sense of hearing is disturbed and the child sleeps with his mouth open, also when swallowing is followed by rapid and inefficient mastication. The author has covered the ground very admirably, and has simplified the surgical treatment. I think the majority of those following this special line of work are inclined to believe that the operation is more satisfactorily done without anesthesia and with the natural or artificial finger nail. The artificial finger nail exhibited by the author seems to me rather large; indeed, it is often rather difficult to introduce one's own finger. I should like to have an expression of opinion concerning the use of bromid of ethyl, as Dr. Bishop uses it, as an anesthetic in these cases.

DR. S. W. KELLEY, Cleveland.—I have been pleased with the terse statements of this paper. What has been said by him about the number of instruments being indicative of an operation being either very easy or rather difficult applies also to the question of posture during operation and the use of anesthetics. In one case you may choose one posture for the patient; in another, another. But posture may vary according to the fancy or the habit of the operator, or be determined by the question of anesthetics. You may find it convenient to have the patient held in the lap of an assistant, while another holds the head and, perhaps, the gag. You may lay the patient down, with the head hanging over the end of the table. You may take his head under your left arm, or you may simply stand him up against the wall, and so on, according to the case you have to deal with. With some patients a local anesthetic can be used, and there is no trouble, while others can be operated on easily without any anesthetic. In some cases it seems to be impossible to do this operation without general anesthesia, because of the temperament or lack of training of the child. He may be too unruly, or he may be too timid. In some cases a general anesthetic would be contra-indicated. As a rule I do not like to use cocain in children. And, notwithstanding all that has been taught about the safety of chloroform in childhood, I have on four occasions met alarming symptoms from its use (not for this operation). So that I do not resort to chloroform unnecessarily. I prefer to do this operation when possible without an anesthetic.

The curette with a handle is a powerful instrument, and I believe a great deal of harm is occasionally done with it. Some operators proceed to use this powerful instrument as if they were about to remove plaster from a wall. Whenever possible I use my finger, and I find it a great deal better than the use of an instrument. Of course there are growths that will yield only to a sharp edge. It is just like the question of using the finger or the curette when it becomes necessary to remove the secundines in a case of miscarriage. I like the artificial finger nail exhibited, but I think the steel blade is too long and must interfere with the turning of the instrument. I prefer to use a narrow artificial finger nail, which slips under the natural finger nail and is guided by the palmar surface of the finger. Any of these instruments will occasionally pull off the finger; hence, I feel safer when a turn of bandage is taken through the last ring of the instrument and is then wrapped a few times around the finger or hand. This also has the advantage of preventing the child from biting the operator's finger.

DR. H. L. K. SHAW, Albany, N. Y.—I am in favor of general anesthesia for the adenoid operation, and I have witnessed the

bloody operations done in England and some other places, to which reference has been made. I also believe that one can do very much better with the curette than with the finger nail. I use ether as often as chloroform, and just as soon as the operation has been done the head of the patient is held downward to allow of the escape of blood.

DR. H. J. ROCK, Aberdeen, S. D.—Is it not a general principle that chloroform is the least objectionable anesthetic, particularly in the case of children? In a fairly extensive experience I have used chloroform, taking plenty of time to secure anesthesia by this means, and I have seen no harm from its use in this way. As soon as the operation is done the child is turned on the side, with the head low.

DR. J. F. KLINEBINST, York, Pa.—My work is limited to the treatment of eye, ear, nose and throat diseases, and, hence, I do many of these operations. When the child is so unruly that an anesthetic must be used, I prefer chloroform. My experience has been that of many others, i. e., that chloroform is more dangerous in this operation than in others, though we know, of course, that children stand chloroform well. I have not had any fatal cases, but in some the symptoms have been very alarming, so that I do not like to use it. I have used frequently a combination of cocain and adrenalin chlorid, and it seems to be a good one, because adrenalin is known to be a powerful heart stimulant and will counteract, to a great extent, the depressing action of the cocain. Moreover, the adrenalin, by its astringent hemostatic action, lessens the amount of hemorrhage. Why chloroform is dangerous I can not say, unless it may be that the chloroform is not given to the extent of abolishing all reflexes.

CYCLIC VOMITING IN CHILDREN,

WITH REPORT OF CASES.

THOMAS C. ELY, M.D.

PHILADELPHIA.

All neuroses necessitate an exclusion of organic disease, a most difficult task, and an appreciation of an unusual excitability of the nervous system. Of all the various gastric neuroses, secretory, sensory and motor, with their protean manifestations, none are subjects of greater interest than the motor and, though perhaps of less frequent occurrence, none of the motor of more interest than cyclic vomiting.

MECHANISM.

The mechanism of vomiting includes a vomiting center, situated in the medulla near the respiratory center, from which impulses are sent to the diaphragm by the phrenic nerves, to the stomach and esophagus by the pneumogastric and the abdominal muscles by the intercostal nerves. The complex act consists in an inspiration, the glottis closing, the diaphragm contracting the longitudinal fibers of the stomach opening its cardiac orifice, when contraction of the abdominal muscles completes the act, forcing out the stomach contents. The muscles of the diaphragm, of the abdominal walls of the stomach itself, require simultaneous contraction and must be co-ordinated by a relatively strong nerve center. The process is almost physiologic. Act of the will quite controls eructation, or belching of gas from the stomach and, in some instances, regurgitation or bringing up liquid or solid food from the stomach. Individuals have been able to vomit at will.¹

In the condition known as merycism or rumination swallowed food is returned and chewed over again. Poorly masticated food may be returned and even enjoyed at will, says one writer.²

With these strange exceptions, however, unlike a physiologic process, the nervous and vascular systems are always reduced in power, probably not only by the act, but by the morbid process which produces the condition

acting on other parts of the nervous system than the vomiting center.

CAUSES.

The differentiation of the causes of vomiting in children frequently presents difficulties. The causes are varied; children give little or no history and the practitioner must grope his way much as the veterinarian. Called for the first time, or in the first attack, to a child with excessive vomiting, with little or no history, we wish to call attention to a class of cases to which such vomiting may belong, and the differentiation of such cases from other attacks of vomiting in children.

The attacks which are herein described occur in gouty and neurotic children and are due to toxins from faulty metabolism and faulty kidney elimination. The attacks are distinct neuroses, being due to the action of a toxin on the vomiting center in a predisposed subject.

Such neuroses have been described at length in literature by Holt,² Rotch,⁴ Pepper,⁵ Griffith,⁶ Gee⁷ and other writers. The distinctive features of this gastric neuroses (cyclic vomiting) is that it occurs in a certain type of children, gouty and neurotic.

SYMPTOMS.

Cyclic vomiting has been likened to migraine in its tendency to recurrence or periodicity. Prostration is extreme. Death has been reported in two instances.³ One other case of death unreported has been brought to my notice by Dr. C. Seltzer, where all known remedies were of no avail.

The vomiting is excessive, severe, protracted, and nothing can be retained by the stomach. Thirst is likewise excessive and distressing. There is no connection in an attack with diet or indigestion. There is generally a fever of indefinite type.

Abdominal symptoms are quite immaterial and varied. The abdomen is generally about normal in appearance. There may or may not be constipation. The urine seems the most distinctive feature, being loaded with amorphous urates and uric acid crystals entirely out of proportion to the fever and other phenomena. Closer study of the urine in all cases may reveal the true cause, possibly blood examinations assisting.

ILLUSTRATIVE CASES.

The following case histories illustrate the condition:

CASE 1.—Boy of 6, well nourished, whose father is subject to arteriosclerosis, and whose mother suffers with recurrent attacks of migraine. The patient had been subject to attacks generally of no longer intervals than eight months.

The prodromes of the attacks were generally malaise, headache, and disgust for food and soreness of the abdomen, with some rise of temperature. The attacks of vomiting were sudden, severe, occurring every half or 2 or 3 hours, and lasting for several days, till the child was completely exhausted. The fever continued throughout the attack. Convalescence was rapid. The urine was always loaded with excessive amorphous urates and uric acid crystals.

The treatment consisted of calomel 1 10 (plain, i. e., dry) on tongue, 1 every hour till ten doses: cocain $\frac{1}{2}$ gr. in 24 hours, given in $\frac{1}{4}$ -hour intervals. Later, phosphate soda. He was restored to health.

CASE 2.—Pale, round-shouldered and of sickly appearance. Both parents were near the age of fifty at her birth and both are of marked neuropathic type. Her diet is always carefully regulated. Cold has precipitated an attack.

There has never been a history of indigestion or constipation, no acid eructations, or foul breath, or coated tongue, or bad taste in the mouth preceding an attack. Skin, conjunctiva and stools are about normal, and there is generally no gaseous distension of the bowels. The prodromes were heavy eyes,

with dark rings beneath, no disposition to play, but rather to rest, lying down most of the day.

Vomiting began suddenly. The child insisted on the basin constantly at hand, saying every few minutes, "I am going to vomit," and retched violently. The blood was not examined. The urine was loaded with uric acid crystals and amorphous urates.

Cocain, at first in larger doses and gradually decreasing, controlled the attacks with calomel in tenths as before, dry on the tongue. This was followed by phosphate of soda, and later syr. hypo-phosph. comp. established convalescence.

CASE 3.—Girl, aged 9, of gouty family. Attack precipitated by grief over death of her mother. Mother's death caused by chronic interstitial nephritis, revealed at the autopsy, urinary findings being negative till fatal uremia. Child was of very affectionate temperament, pupils filling the eyes, a highly developed and easily irritated sympathetic nervous system.

Attacks began with nausea and slight vomiting for a time, and then attacks which were violent and persistent occurring almost every hour. Temperature ranged from 99 to 101. Vomited material consisted of frothy mucus and serum, very acid. The blood was not examined. The urine was loaded with excessive uric acid crystals and amorphous urates.

At the end of the third day the face was pinched, heavy black rings under the eyes, eyes half closed, body drained of fluids and condition one of prostration and collapse. The pulse was 160 and very weak, requiring digitalis and strychn. hypodermically. The tongue was singularly clear and red. The abdomen was neither distended nor flattened, but about normal, although auscultation revealed an absence of peristalsis. There was present distressing thirst and hurried and irregular respiration, though hurried respiration, particularly at the time of vomiting, should have little significance, owing to the proximity of the respiratory and the vomiting center.

The treatment consisted of high enemas of saline solution and a hypodermatic injection of morphin 1/18, and atropin 1/500. The duration of the acute attack was five days. The after-treatment was symptomatic, consisting of sedatives, eliminatives and tonics.

During convalescence itching skin and eczematous rash over the buttocks suggested a blood irritant of the uric acid series.

Thirteen weeks followed of irregular pulse and slightly elevated temperature—90 to 100—with no other explanation than a marked disturbance of metabolism.

This case seems to be properly classified as of the "cyclic vomiting" type, the causative factor in this instance being an emotion from an unusual cause.

DIFFERENTIATIONS FROM OTHER ATTACKS OF VOMITING.

A condition most likely to be confounded with these gastric neuroses is the more ordinary recurrent bilious vomiting.

The points of distinction are these:

- | IN BILIOUS VOMITING. | IN CYCLIC VOMITING. |
|--|---|
| 1. History, improper feeding. | 1. No such history; may occur with most careful diet, with no symptoms of indigestion. |
| 2. Unloading the bowels relieves. | 2. No such effect. |
| 3. Tongue coated. | 3. May be clean. |
| 4. Breath heavy. | 4. Breath late in attacks may have wine odor of acetone, but otherwise normal. |
| 5. Abdomen bloated and distended. | 5. Generally about normal. |
| 6. Abdominal pain and colic. | 6. As rule, none. |
| 7. Abdominal peristalsis and with colic. | 7. Auscultation of abdomen, especially later in the attack, reveals absence of peristalsis. |
| 8. Stools often clayey. | 8. Generally normal. |

IN BILIOUS VOMITING.
9. Ordinary febrile urine.

IN CYCLIC VOMITING.
9. Urine scanty and loaded
uric acid crystals and
amorphous urates out of
proportion to other
symptoms.

In cyclic vomiting, in conclusion, the excessive thirst, cyclic character, severity and persistence of the vomiting are quite pathognomonic. A differentiation of other causes of vomiting requires an examination of all the organs.

1. Vomiting may be due to local disease, irritation of the walls of the stomach itself, as in cases of any irritation, as of medicine or of food in quantity or quality, overdistension with gas, congested mucous membrane, with irritating secretions, which cases reveal themselves by a study of the relation of vomiting to food and a study of the material vomited.

2. Vomiting may be due to intestinal causes of quite the same nature as above or to such other abdominal causes as obstruction, peritonitis, appendicitis, which soon present very distinct physical signs and symptoms of these conditions.

3. It may be, also, reflex from other disturbance, as of the cerebrospinal system or the special organs—from brain disease, from the pharynx, eye or ear, or almost any organ.

4. Vomiting may be central or toxic from an irritating state of the blood acting on the vomiting center, in the same manner as a hypodermatic of apomorphia.

This would include infectious diseases, which soon express themselves by well-known symptoms or rashes, and the vomiting is generally neither prolonged nor excessive, and very frequently consists of but one or two explosive effects.

Among other causes of central vomiting may be included the toxemia incident to kidney disease.

In the vomiting of children it is always wise to follow two rules—to examine carefully the throat, and not to be easily convinced that the cause is local—an irritated or diseased stomach. Very frequently it is not at all of gastric origin.

The stomach, organic brain disease and organic kidney disease may represent the most frequent causes.

G. R. Butler says: "Vomiting is sometimes seen as the only marked symptom of an apparently slight nephritis. In such cases its onset is abrupt, its course intense and its outcome not infrequently fatal."

5. Simple or tuberculous meningitis may present greater difficulties, especially when we consider that vomiting may be rarely the only symptom of such a meningitis till a fatal issue by convulsions. The condition of the pupils, the eye ground, irregular pulse and respiration assist the differentiation.

In the periodical vomiting which occurs in cases of *tabes dorsalis* in adults, a possible history of syphilis, the symptoms of station and patellar reflex and ocular symptoms are so characteristic that they can not be confounded and are mentioned only because articles on "periodical vomiting" refer to such neuroses, which are in no way related to cases of periodical vomiting now considered.

Other attacks of periodical vomiting, with abdominal pain, in adults, have been described in literature, but have none of the marked features of these attacks. Still other conditions described as periodical attacks of vomiting in children are very plainly recurrent bilious attacks, in children careless of diet and hygiene, which have been described.

That the phenomena of cyclic vomiting is due to some toxic blood state seems certain, the exact nature of the toxin remaining in obscurity. It may be allied to the unknown toxin of uremia. It is probably of the xanthin series, one of the uric acid group. The attacks resemble the so-called "uric acid storms" described so graphically by Haig, in that the extremities are cold, glandular secretions decreased and scanty urine and large excretion of substances regarded as uric acid.

The attacks differ in the fact that there is no headache or mental depression, and in the character of the pulse, which is not usually of high tension, but weak and irritable like the pulse of toxin poisoning. It is a pulse which can in no way be explained by the tension caused by impeded capillary circulation, which a colloid state of uric acid may occasion. The symptoms are not so much of uricacidemia and the clogging of capillaries as of some toxin possibly of the uric acid series acting directly on the vomiting center.

The impressibility of certain nerve centers, and the difference of susceptibility of particular nerve centers in particular individuals help to explain the phenomena. It is well known that toxins of the alloxuric group irritate particularly nerve centers, and that uric acid products are particularly injurious to nerve tissues, and we may be warranted in the assumption that some of these chief products of waste metabolism irritate the vomiting center in these gastric neuroses, though we do not know the steps of the biochemic process or the exact toxin. In all three cases there is a neurotic or gouty, or a neurotic and gouty family history.

In all three cases the presence of amorphous urates and uric acid crystals in excessive proportion to the febrile disturbance point to a toxin of the uric acid series. In each instance the alimentary tract and accessory glands seemed fairly normal and the auto-intoxication seems not of intestinal origin, but cellular, with perhaps faulty kidneys.

When we consider how little we know of the toxin of uremia—a condition more pronounced, more serious and more frequently at hand for study—we may be less chagrined at our lack of knowledge of the toxin in this gastric neurosis.

TREATMENT.

The treatment is sedative and eliminative. The indications are: First, to lessen the irritability of the vomiting center; and second, to eliminate. The first has been attempted by bromids and chloral by the bowel, which is not satisfactory. Nothing is so effective as hypodermatics of morphin and atropin in severe cases. In less severe cases cocaine and Fowler's solution lessen irritability both of the vomiting center and the peripheral nerve endings in the stomach wall.

Elimination is best accomplished by calomel, dry on the tongue in small and frequent doses, in conjunction with high saline enemas.

Gavage has effected good results in young children. No other diet than some of the liquid peptonoids in form should be attempted for several days. In the interval there is indicated abundant fresh air and careful skin activity, exercise short of fatigue, an avoidance of nervous strain and child worry, with an antiuric-acid diet.

CONCLUSIONS.

In conclusion I wish to emphasize:

1. The importance of being watchful, on one's guard for the vomiting of this gastric neurosis, distinguishing it particularly from bilious vomiting and the vomiting of kidney disease and reflex vomiting, as of brain disease.

2. In children of gouty and neurotic history the three cases reported point to a toxin allied to the uric acid series as the possible blood irritant causing the vomiting.

3. The importance in severe cases of hypodermic injection of morphia and atropia in conjunction with elimination, by high saline enema; by gavage; and in extreme cases, hypodermoclysis and even intravenous injections of saline solutions.

2011 Green Street.

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Special Article.

THE TYPHOID EPIDEMIC AT ITHACA.

(By Our Special Commissioner.)

II.

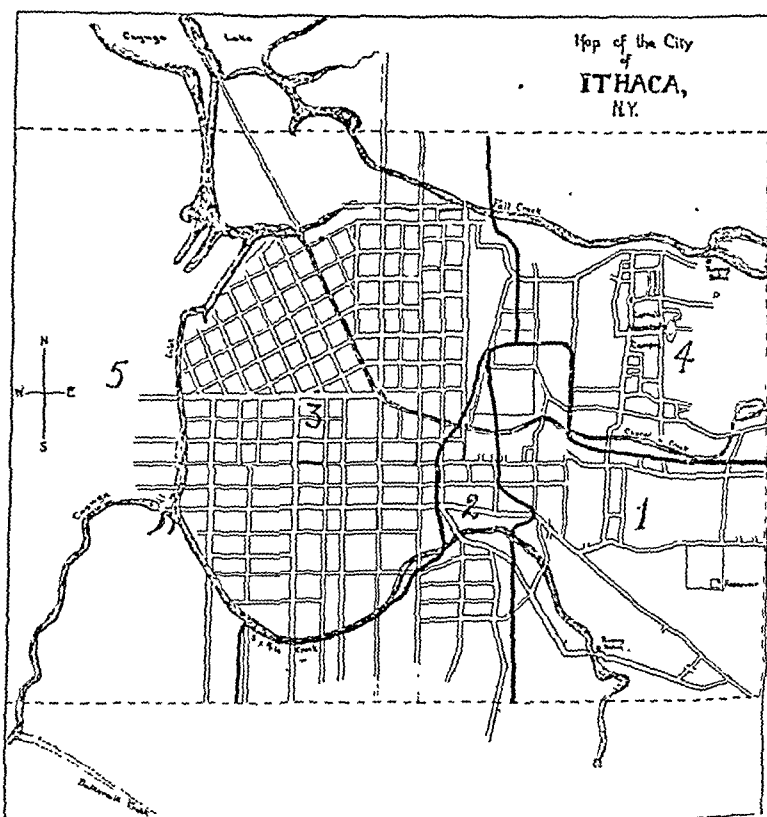
THE DIVISIONS OF ITHACA IN RELATION TO TYPHOID INCIDENCE.

Very early in the history of the outbreak it was suspected that the public water supply was in some way implicated. With respect to the sources of the water used for domestic purposes the town may be conveniently divided into five different districts: 1, Receiving water exclusively from Six Mile Creek; 2, receiving a mixture of water from Six Mile Creek and Buttermilk Creek in the proportion of 1:1; 3, receiving mixed water from Six Mile and Buttermilk creeks with an excess of the former in the proportion of about 3:1 or 4:1; 4, receiving water from Fall Creek; 5, dependent on wells, springs or sources outside of the regularly pumped supply.

The distribution of the cases of typhoid fever in the town at once drew attention to the significant incidence of the infection. The main city water supply is derived in part from Six Mile Creek alone, and in part from mixture of this water with that of Buttermilk Creek. The water from these sources (Districts 1 to 3) is furnished by the Ithaca Water Company, a private corporation. The Fall Creek source, which is controlled and managed by the university authorities, supplies the university buildings, some fifty-two houses on or near the campus, including six fraternity houses and about seventeen houses at Cornell Heights to the west of Fall Creek. This section of the town has remained exempt from typhoid fever, except in the cases of a few individuals, who resided on the campus but boarded elsewhere, and one student in Sage College, who is known to have drunk water in other parts of the city. With the one exception noted, the women students of Sage College, numbering over 200, have not been affected. The same is true of the students in the several fraternity houses that are supplied with Fall Creek water. The larger part of

the town, however, especially that furnished with water directly from Six Mile Creek, has suffered severely.

It appears from the meager facts that could be learned concerning the distribution of cases within the infected area, that the district receiving exclusively Six Mile Creek water was much more severely affected than the rest of the town. This section, the East Hill district (1), which is thickly dotted with student boarding houses, has borne the brunt of the epidemic. In the district supplied with the mixed water from Six Mile and Buttermilk creeks, the proportion of cases appears to be smaller than on East Hill. In the outlying parts of the town, supplied with well water, the number of cases is said to be relatively small, although it is extraordinarily difficult to obtain precise information on this and all other points that require the consulting of accurate records. I have also found it impossible to obtain defi-



nite information concerning the distribution of population within the specified areas. The population supplied from Fall Creek numbers probably at least six hundred; and that supplied with mixed water from Buttermilk and Six Mile creeks is considerably larger than that supplied from Six Mile Creek alone; but beyond these facts there is little to assist the investigator in determining the proportion of cases to population. In view of the compact character of the town, and the opportunities for using infected water throughout most of its territory, it is certainly rather surprising that there have not been more cases of incidental infection among the population supplied by Fall Creek. If the disease had been distributed evenly over the city in proportion to the population this district should have had at least 30 indigenous cases, whereas it is not known to have had one. The fact that the section receiving Six Mile Creek water but no water from Buttermilk Creek (1) has been

1. First pumped to a small reservoir containing less than a day's supply.

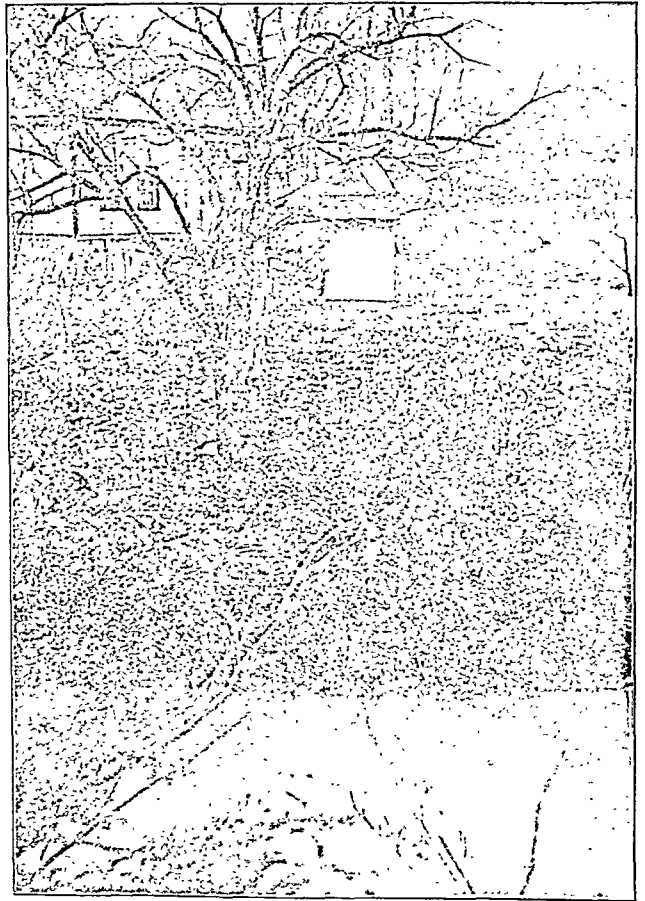
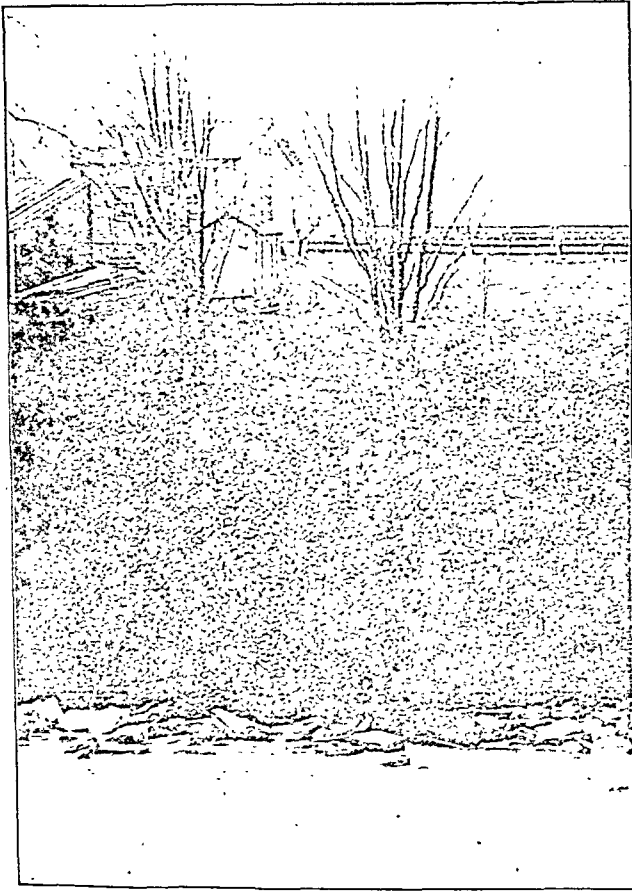
seriously attacked, and that the section supplied with the mixed water from these two sources has also suffered, points unmistakably to Six Mile Creek as the source of infection, although the possibility that Buttermilk Creek was simultaneously infected can not be excluded.

As regards the especially heavy incidence of the disease on District 1 there are several ways in which this might be explained. In the first place, the fact that in this district the Six Mile Creek water alone is used would seem to indicate both a more direct and a quantitatively greater infection. A second factor that has undoubtedly played a part is the age distribution of the population in this district. The large number of university students dwelling in the East Hill boarding houses constitutes an

recognized as specific, confer immunity to subsequent attacks of typhoid fever. On this ground, it would not be at all remarkable if the disease had raged more severely in the virgin soil of the student boarding houses than among the previously exposed and presumably somewhat seasoned inhabitants of Ithaca. Probably all of the factors mentioned have contributed somewhat to the extraordinary prevalence of the disease among the student population on East Hill.

CHARACTER OF THE WATER SIEDS.

The conditions surrounding the several sources of water supply are particularly significant. Six Mile Creek, which affords the major part of the town's supply, has a watershed with an area of about 48 square miles.



age group possessed of maximum susceptibility to typhoid fever. It is well known that the greatest susceptibility to this disease is between the ages of 15 and 25, and that consequently a population of college students presents a mass of material of peculiarly inflammable nature. A third factor that may possibly be important is that the student population is not composed of permanent residents and hence had been relatively untried by typhoid infection. It is probable that many of the inhabitants of Ithaca, living in the lower town, had at one time or another suffered from mild or unrecognized cases of typhoid fever, the so-called "Ithaca fever," or "typhoidette," to use the term of some of the French epidemiologists (Lorain). There is a certain amount of evidence that exceedingly mild infections, often not

The watershed is slightly more than ten miles in length and is very narrow; the numerous small and rapid feeders of the main stream traverse for the most part short distances. The stream is not a large one; the average daily flow during January and February, 1903, is estimated at five to six million gallons, and during a large part of the year it is much less than this. Without a storage system, it does not alone suffice for the town supply (two to three million gallons daily). The population on this watershed may be roughly estimated at 2,300-2,500. Most of these inhabitants live in scattered farm houses, although two small village communities, Brookton and Slaterville, the latter a summer "health resort" with several small hotels, are within this area. Observation of the conditions prevailing on this water-

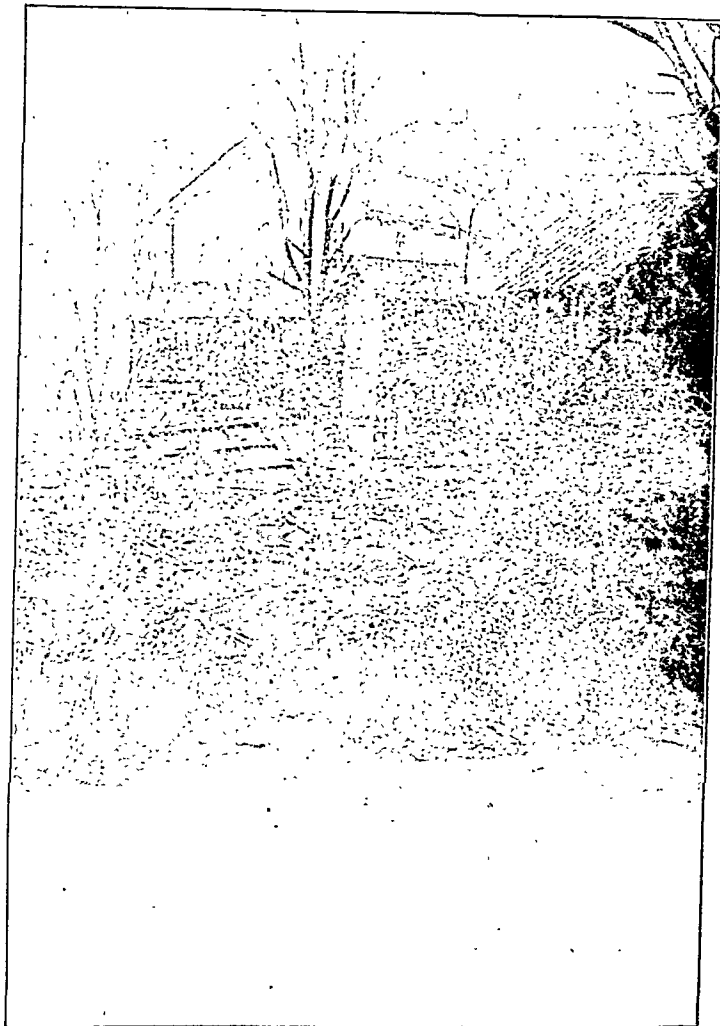
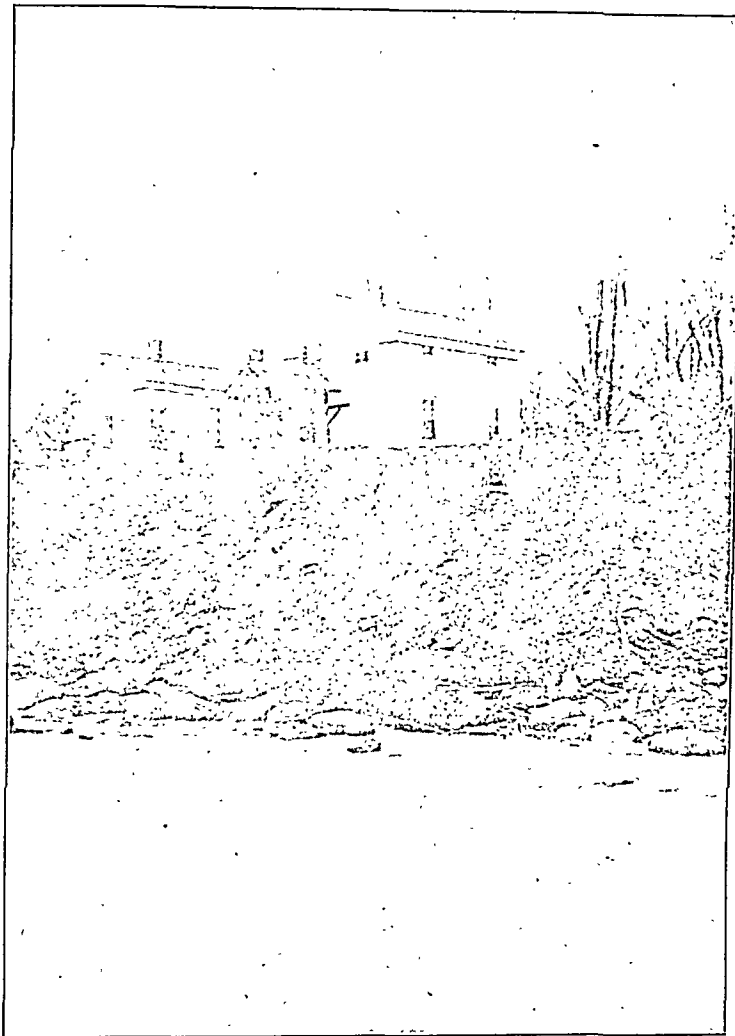
shed at the time of the writer's visit showed that many of the houses are situated on the very border of Six Mile Creek or its tributaries, and that, in many instances, there is abundant opportunity for fresh drainage from manure piles, pig pens and outhouses to pass directly into the stream. The accompanying illustrations² represent views taken along the banks of Six Mile Creek in the village of Brookton, four miles above the point at which the Ithaca supply is pumped. In certain places the slope of the ground is such that the drainage from outhouses and privies can pass freely into the stream. The current in Six Mile Creek and its tributaries is swift, and at those seasons of the year when the streams are full, it

The next residence on the right bank of the stream is that of Mr. E., standing on a tributary. The closet is within ten feet of the tributary, and the hen house and hog pen stand about twenty feet from the tributary, with the slope toward the tributary. . . .

At the residence of J. McF. the closet is within fifteen feet of the stream, with the bank sloping steeply into the water; at this place there are five cases of scarlet fever, two of whom are recovering. The barn and pigsty stand on the bank of a short tributary to the stream, and drain directly into the main stream. . . .

At the residence of J. G. the closet is directly on the bank of the stream, with no vault underneath.

The watershed of Fall Creek, from which the water supply of the university campus and some closely con-



is possible for drainage from almost any part of the watershed to arrive at the water intake within three or four hours after entering the stream.

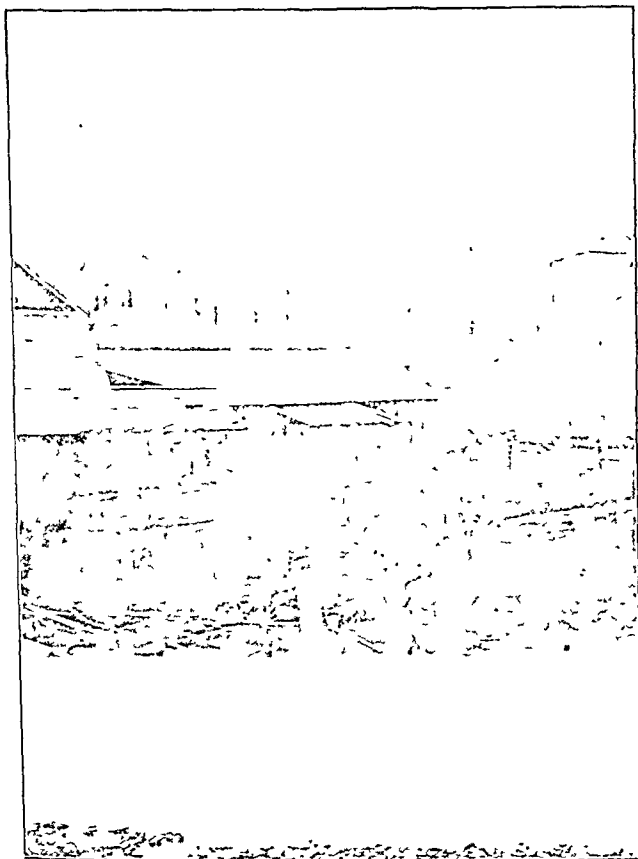
Buttermilk Creek, which at present furnishes part of the public supply, was not visited by the writer, but is said to have a watershed of very similar character to that of Six Mile Creek. It is stated to be in somewhat better condition than that of Six Mile Creek, principally because the stream is not so long. A report on Buttermilk Creek, made Feb. 16, 1903, by official inspectors of the local board of health, contains the following suggestive items among many others of a similar character:

2. These views were taken last week especially for THE JOURNAL and to accompany this report. They describe more graphically than words the true conditions. Other photographs were taken but the ones here reproduced are believed to be amply sufficient.

tiguous territory is derived, is, if anything, in a less satisfactory condition than that of Six Mile Creek. In proportion to the size of the watershed and length of the stream, the amount of pollution is greater than in either of the other sources. About one mile above the water intake is located the small hamlet of Forest Home, where the opportunities for direct and rapid drainage into the stream are even more conspicuous than at Brookton. If an unwatched or improperly-cared-for case of typhoid fever had developed at Forest Home, infectious material might conceivably have passed into the university supply with great promptitude. No greater safeguards appear to have been thrown around the Fall Creek supply than around that of Six Mile Creek. In fact the general surroundings of Fall Creek are apparently of a much more dangerous character.

QUALITY OF THE WATER.

It has long been a matter of common knowledge in Ithaca that the town water supply was not above criticism. Many citizens have not used the public supply for years for drinking purposes. The use of boiled water or of spring or artesian well water has been general; such measures of protection have been often resorted to by the advice or on the warning of the Ithaca physicians, many of whom appear to have been alive to the situation. The writer has been told that the use of the raw water for drinking has been known in certain families to bring on attacks of "bowel complaint." These attacks ceased if a different water were used, only to reappear when the drinking of raw water was resumed. More than this,



analyses of the town supply have shown on several occasions that the water contained objectionable or suspicious constituents. A report was made to the Ithaca board of health, March 11, 1902, by Professor Chamot of Cornell University, in which, after a detailed report on the results of examination of the water, the water was pronounced "unfit for drinking purposes." It is stated that analyses of the Fall Creek water have in general shown somewhat greater pollution than the other sources.

Long before the present outbreak, therefore, the facts were at hand concerning (1) the excessive prevalence of typhoid fever in the town, (2) the character of the several watersheds draining into the streams which were the source of the town's supply, and (3) the quality of the water itself and the effect of its use on the health of citizens.

(To be continued.)

Careless Prescribing.—I have been astonished at the original prescriptions of men who, in all branches of their profession except therapeutics, were quite capable. They seemed to have no knowledge of the incompatibility of drugs. A few instances may suffice to illustrate this. Cocain and borax are often ordered in the same mixture, with the result of forming an insoluble precipitate of cocain borate. Ammonium carbonate is frequently ordered by physicians in the same cough mixture with syrup of squills, which contains acetic acid, with the result that a chemical reaction takes place liberating carbon dioxide, and the gas given off startles the patient by forcibly expelling the cork or even bursting the bottle. An acid and an alkali should only be mixed when a new product is desired. How frequently iron is ordered mixed with substances containing tannic acid, with the result of forming iron tannate or ink. —H. R. Purdy, before the N. Y. State Med. Assn.—"Amer. Druggist."

That Decreasing Birth Rate.—Statistics continue to appear on this subject in the press of the country. An editorial in *THE JOURNAL*, Feb. 21, 1903, page 521, expressed doubt as to the fact of an actually decreased birth rate. Apropos are the statistics presented by the "Northwestern Christian Advocate," which seem decidedly at variance with some previously referred to in our columns. The "Advocate" says that the analysis of the statistics on births compiled by the twelfth census does not bear out the contention that the birth-rate in the United States is decreasing. At least the figures, based on what the compilers of part 1 of the vital statistics say are imperfect data, indicate that there was a slight increase in the birth-rate for the decennial period of 1890-1900 over that of 1880-1890. Not the least interesting feature is that the greatest increase occurred in the northeastern or New England group of states, which includes New York (compare with *THE JOURNAL*, March 14, page 722). In this division the increase was 1.7 per 1,000. An analysis of these figures, including the average annual excess of births over deaths for the period from 1890 to 1900, shows the following results.

	Birth-rate 1890.	Excess births over deaths.	Birth-rate 1900.
United States	26.9	17.7	27.2
Northeastern division	22.1	11.5	23.8
Central and northern division	26.8	18.4	25.9
Southern division	30.1	19.8	31.5
Western division	22.0	18.7	22.8

The Diabetic Flour Swindle.—According to a Massachusetts State Board of Health report, of thirteen samples of diabetic flour, or flour prepared for the use of diabetics and purporting to be free from starch, only three samples, the product of one manufacturer, were found to be free from starch; the other ten, or nearly 80 per cent. of the samples collected, were found not only to contain starch, but that in large quantities, seven being found with 60 per cent. or more of starch. These were in reality but little better than whole wheat flour, and were sold at prices varying from eleven to fifty cents per pound. There are probably few of the better informed of general physicians who would not say, "All the better for the patient, so far as his health is concerned," because bread that does not contain starch doubtless injures him more than the best-made, well-baked "crusty" wheat bread. There seems to be a deal of indefiniteness and a vast deal of difference of opinion among physicians as to these questions of bread and diet for diabetic patients. These differences do not show themselves so much in the text-books, where there is general uniformity of advice. But when it comes to getting his bread the poor diabetic finds that the physician knows little or nothing as to the chemist and digestive qualities of the breads he can buy. The matter is left without oversight to the bakers and commercial agents, precisely where it should not be left, and much to the perplexity of the patient. No wonder that the diabetic's health fails when he tries to digest some of the "bread" he is advised to get! After trying it he can but think, if he does not know that his disease is a modern one, that the origin of the scriptural injunction against giving a stone when bread is asked for arose from the experience of his poor ancient brethren in trying to live while conforming to the scientific diet-list of those days.—"American Medicine."

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THE RESPONSIBILITY AT ITHACA.

There was a time when the epidemic of typhoid fever at Ithaca would have been looked on as a visitation of God; at the present time it must be recognized as a failure on the part of some persons to do their duty. Sometimes there may be an excuse for not recognizing signs of danger, but not in this instance, for they were too apparent; even the pictures obtained by our commissioner and presented in this issue prove this. The situation as depicted in his report is of no uncertain character.

The Ithaca Water Company, which owns and controls the water pipes, pumping stations and their connections, and presumably also certain portions of the drainage area, can hardly be absolved from a share in the responsibility for the disaster. The condition of the watershed furnishing the main supply appears to have been so patently dangerous that the most superficial observation could detect the mischievous possibilities that flaunted themselves along the banks of the stream. A private corporation, although primarily organized, it is to be presumed, for purposes of private or corporate gain, nevertheless incurs certain responsibilities which can not be lightly disregarded in undertaking to distribute a commodity so indispensable as drinking water. It is possible that even if the banks of Six Mile Creek had been carefully patrolled, and if all nuisances along its banks had been abated just as far as was practicable, the epidemic might still have occurred. The fact, however, that such obvious and elementary precautions appear to have been largely, if not altogether, neglected, throws a heavy weight of responsibility on the water company.

The city authorities of Ithaca must likewise not be surprised if they receive from the world at large their share of the blame for the outbreak. Although spasmodic efforts seem to have been made from time to time to cope with the water situation and plan for its betterment, there appears to have been no concerted and definite plan of action which could result in efficient treatment of the problem. There is unfortunately only too much reason to believe that many American municipalities are in a position very similar to that of Ithaca in respect to an unguarded supply of surface water, and are allowing themselves to drift along from year to year in the easy assurance that nothing serious will happen. In most cases nothing does happen other than an ex-

cessive tribute paid each year in the deaths of young men and young women from typhoid fever. Occasionally, however, some unusual occurrence, like the one at Ithaca, will cause an amount of illness and death so great as to focus the eyes of the whole country for a time on the afflicted community. It would perhaps be unjust to condemn too severely the negligence or indifference which has the supreme misfortune to be punished by a particularly violent outburst of disease, so long as it is known that a very large number of municipalities are taking similar risks, and, safe in the happy doctrine of chances, are likely to escape similar retribution.

In turning to the possible responsibility of the authorities of Cornell University, the matter assumes a somewhat serious aspect. The influence possessed by the University in the councils of the town, its financial and moral prestige and the fact that it possessed, or might easily have secured, expert evidence as to the character of the town water supply, are all factors that can not be ignored in forming a judgment. Not only was it notorious that the town water supply was bad, but it was known that typhoid fever had for some years prevailed excessively; and the dangers to a community largely composed of college students, from the deplorable situation portrayed by our commissioner, ought to have been clearly foreseen. The university housed within its own walls many men who would have informed it without ambiguity or hesitation as to the existing situation and the catastrophe which might some day not unreasonably be expected if nothing were done.

It has been urged in defense that Cornell University incurred no more responsibility by allowing such conditions to exist than Columbia University or the University of Pennsylvania assumes for the water supply of New York or Philadelphia. The cases, however, are by no means parallel. Apart from the fact that public opinion generally will hold that the universities named would be unquestionably to a large extent morally liable for an outbreak of typhoid fever among their students, unless the authorities do all in their power to provide a pure water supply, it can not be said that the responsibility of a university in a great city is at all in the same category with the responsibility of a university in a small town, which it can largely influence or even, if necessary, dominate. The apparent neglect by the Cornell authorities of their responsibilities is further shown by the facts given regarding the university's own water supply, which, although not incriminated in the present outbreak, does not appear to have been surrounded by any substantial protection. We are reluctantly forced to believe that the Ithaca epidemic will always be looked on as an instance of oversight and neglect on the part of those in control of a great educational institution. Instances of amazing indifference and ignorance on the part of private water companies and municipal officials are not as uncommon as they should be, but that the

authorities of a great university should fail to realize their responsibilities in such an important matter may well give rise to more than passing wonderment.

THE SANITARY PROBLEMS OF THE PANAMA CANAL.

There is no great enterprise which tends to revolutionize the commercial channels of the world that has not its important sanitary aspects. Just at this time the Panama Canal seems a reasonable certainty in the not very distant future and the water route to Eastern Asia will be largely diverted from its present channels. The possibilities of this fact as regards health and sanitary matters are really serious and important.

In a discussion at the London Epidemiological Society, February 25, Dr. Patrick Manson took up this subject, calling attention to the diffusion of disease by insects, especially the mosquito as the intermediary host of the specific hematozoa, with special reference to the question of yellow fever as it concerns the Panama Canal. At the present time yellow fever is a disease confined particularly to the east coast of America and a part of the west coast of Africa, occasionally, however, passing across the isthmus routes to the Pacific ports of Central America. Thus far the Orient has escaped. With the building of the canal there will be many thousands of oriental laborers employed. They will come by the shiploads from Japan and China and return with whatever infections and diseases they have acquired in their more or less prolonged residence along the unsanitary isthmus. Yellow fever is a disease which, while not constant or indigenous on the isthmus, is yet comparatively frequent there on both sides, and its prophylaxis will be hardly less important than that of malaria, which in its pernicious form has there cost so many lives in the construction of transportation works, railroads, etc., in years past. The *stegomyia* is almost a universally distributed mosquito throughout the tropical and subtropical regions of the earth; the means for the diffusibility of the disease, therefore, are supplied. This mosquito can live as long as 75 days, and a voyage of eight or ten weeks across the tropical Pacific would be no surety against its transmission. There have been cases reported where ships have carried yellow fever without having any cases of it aboard. The only security is in thorough fumigation of vessels and destruction of any mosquitoes that may be secreted in their recesses. Dr. Manson suggests an international commission of all the civilized powers to act on this matter. Inasmuch as this would imply a certain amount of police power, it is doubtful whether the proposition is a thoroughly digested one. But certainly something should be done to prevent the spreading of this pest into regions where it has not before existed. He also suggests a clearing and absolute drainage of the country within half a mile of the canal on each side as a necessary item of prophylaxis. It is doubtful whether all this could be done at once, but much can be done, and with wideawake port sanitary authorities it does not seem that transmission of the disease can not be

prevented even without the complete and most thorough methods he suggests.

There is still another point to be considered in connection with the rapid and frequent transit between Asia and tropical America which the canal insures. There is an equal chance for the introduction of Asiatic pests and scourges to this continent. The plague is almost endemic in some of the eastern countries, and cholera is still more so. We know what plague can do on the west coast of Mexico from the little epidemic that occurred at Mazatlan and one or two other places. Any wholesale introduction of this disease, which is just as possible as the introduction of yellow fever into Asia, might produce consequences which would be worse than anything we have yet seen or imagined.

The building of the canal itself involves sanitary problems of a serious character. In some respects the Nicaragua route would seem to have been a less pestilential one, though its inconveniences in other respects seem to have decided the matter against it. The west coast of Central America at least is comparatively healthy. On the east coast the severer forms of malaria are more or less prevalent. The subject is a timely one for us to consider.

It is not out of place also to reiterate what we have said before in regard to having a well-qualified medical man among the commissioners, who shall have full and complete charge of all sanitary arrangements and work. There is no doubt that there will be a physician in charge of this branch, but unless special effort be made to have such full powers allowed him, this position will be a vexatious one, and his views will be carried out or not as it pleases those who may be above him. Now is the time for action, as those men who are to have charge of the work will soon be appointed by President Roosevelt.

CYTOTOXINS AND THE PATHOLOGY OF PREGNANCY.

Among the most interesting of the researches on cell toxins is that in which the exciting substance is placental tissue. It is of special interest, first, because there is a possibility that some features of the pathology of pregnancy may be explained by the results obtained, and, second, because the practical use of the serum so obtained seems nearer than is the case of many of the other cytotoxic serums. A reason for this hope lies in the fact that placental tissue is the tissue, par excellence, that can be obtained from human beings in fit condition for use in immunizing animals. With the exception of the blood the placenta is practically the only human substance available for this work. W. Liepmann¹ has already made a number of experiments showing that the serum of rabbits immunized with human placenta will produce a precipitate when added to clear human serum that has stood for a time in contact with placental tissue. As he was able to produce a similar precipitate with blood serum from the umbilical cord of infants, and also

¹ Deutsche med. Wochenschr., 1903, xxix, No. 5.

with retroplacental blood serum, he concludes that certain constituents of the placenta enter the blood stream. The practical bearing of this lies in the possibility that here is discovered a new method for diagnosing pregnancy. It is well known that placental cells enter the blood of the mother during pregnancy, for they have been found as emboli in the lungs, kidney and elsewhere. Liepmann promises to investigate this subject further.

In connection with the pathology of pregnancy we have the old theory that eclampsia is due to products of placental disintegration, either soluble substances or the cellular emboli above mentioned. Some of the earlier investigators of placental toxins stated that they found injections of human placenta toxic to animals, but Liepmann, who carefully excluded bacteria, did not get any such results. Albuminuria had been noticed in many of the animals and considered of significance in relation to eclampsia, but he considers this a simple physiologic albuminuria, such as is found when foreign proteids are introduced in large amounts into the circulation. However, if there is any basis for the placental origin of eclampsia, the use of serum of animals immunized with placental tissue may prove of therapeutic benefit. Hence, a study of the effect of placental serum on pregnant animals will be of interest, but let us hope that a new abortifacient has not been discovered.

Ascoli² has studied particularly the relation of cytotoxins to eclampsia. Rabbits were immunized with guinea-pig placenta, and their serum, although not toxic to pregnant guinea-pigs when injected subcutaneously or into the veins, caused symptoms that seemed to him much like those of eclampsia when injected under the dura. Controls showed that normal serum had no such effect, and rabbits did not suffer any symptoms from such injections. He suggests that the placental cells that are swept into the circulation during pregnancy may cause the production of cytotoxins leading to eclampsia. This reasoning from animal experiment to human disease is open to the objection so often advanced in cytotoxic work, that the serum used in the guinea-pig was from the rabbit, and was shown to have no effect on rabbits. In the case of eclampsia there is no question of foreign serums, and there is a wide gap between "autocytotoxins" and "heterocytotoxins." Of course, we must bear in mind that in eclampsia it is not at all impossible that the fetus plays some part.

To us the most suggestive feature of all this work has yet to be pointed out; that is, the use of this particular serum in the treatment of tumors. The proposition that tumors might be influenced by cytotoxic serum was the first outcome of cytotoxic work, but the development of this very important application has been prevented by the impossibility of procuring sufficient tumor tissue with which to immunize the animals that should furnish the serum. With the placenta it is different, for, first, this tissue can be readily obtained, and secondly, tumors

of placental tissue differ from ordinary tumors in resembling more the parasite as it attacks the host. Syncytioma malignum is fortunately rare, but extremely malignant. It is often diagnosed from scrapings or operation before great inroads have been made. The tumor develops from a tissue that is practically foreign to the host, and in this way resembles a parasite. The parent tissue is not of vital importance; if we could prepare a serum for hypernephroma, for example, we should fear its attacking the normal adrenal structure as well as the tumor, with disastrous results, but there could be no such difficulty in the case of the placenta. For these reasons it seems that placental cytotoxins offer a particularly practical field for study, and that syncytioma may be a good point at which to attack the problem of serum therapy of cancer.

MEDICAL JOURNALS AND WEEKLY EDITIONS.

The *Allg. Med. Ct.-Ztg.* of Berlin is now in its seventy-first year, and has been published heretofore two or three times a week. It now announces that a single weekly edition will be issued henceforth. The *Archives Gén. de Médecine* has changed from a monthly to a weekly with the new year, the eightieth of its existence. The Italian *Riforma Medica* has long proudly boasted that it was the only medical daily published in the world. It, too, has fallen into line with the weeklies, and the nineteenth volume, commencing with the current year, brings it as an enlarged weekly journal. The *Bulletin Médical* of Paris is about the only one of our exchanges that still clings to two editions a week. The *Gazette Hebdomadaire*, which belied its title by publishing two numbers a week, ceased publication with the close of 1902, its forty-ninth year. One of its features will be much missed unless inaugurated in some other journal. We refer to the lists with abstracts which it published of the medical theses presented at the French universities. The *Paris Gazette des Hôpitaux* has three editions a week, and also the Italian *Gazzetta degli Ospedali*, but in the latter the original communications are restricted to the Sunday issue, which appears with a colored cover. The journal is thus practically a weekly with two supplements for abstracts. One of the changes brought by 1903 in our exchanges is that the letter C is being tabooed to a certain extent in Germany. Our familiar friends, the weekly *Centralblatts*, are *Zentralblatts* now, *Medicin* is *Medizin*, and so on. This seems to be merely another evidence of the tendency displayed by the Germans to refrain from using the terms which are current in science the world over and which are gradually developing an international scientific language. The Germans are serene in their consciousness that no scientist can work without a knowledge of what is being done in Germany in his line, and consequently he is obliged to put up with whatever home terms they may choose to use. They care nothing for the expense of dictionaries and waste of time which they impose on the scientist with the word *Wurmfortsatz*, for example, where all the rest of the world says *appendix*, *angeboren* instead of *congenital*, or *Speiseröhre* for *esophagus*, etc. In fact, we suspect they are inclined to chuckle over the

difficulties they place in the path of the scientist of another nationality. It serves him right for not having been born a German.

CÆLUM, NON ANIMUM MUTAT.

Change of locality seems to have little effect on the ill luck of a noted biologist recently transferred from Chicago to California. He is, it is said, greatly troubled by the fact that his utterances are still picked up by reporters in the most sensational way from time to time. In fact, there is a very short interval between them. One day it is announced in the newspapers that the actual secret of life has been found in cyanid of potash, again it is calcium salts that have an importance which has never been before attributed to them in the vital processes. The last announcement is that the revelation of the nature of life itself is probably within our reach. All that we have to do to understand it completely—and he seems to think this will be done—is “to control it unequivocally by physical and chemical means, or to repeat it in all detail on inanimate matter.” This is a large contract. There is a sort of wisdom which consists in appreciating our limitations. A wisdom that is lacked by the antivitalist who can not willingly believe that anything mysterious exists or that it is beyond his intellect. Our modern would-be Prometheus says:

We can not allow, however, that there is any obstacle to our complete control, and, in consequence, to our knowledge, of life phenomena. Every one, I believe, who recognizes the control of life phenomena to be the greatest problem of scientific investigation will come to the same conclusion. Authors who have come to the opposite pessimistic view have placed too great faith in some hypothesis or have fallen victims to a poor or wrong interpretation of the facts. It is self-evident that the pessimistic view can only hinder, but never further, the progress of science.

What hindrance is it to research for one to believe that thus far nothing has been done to actually or satisfactorily solve the mystery of life and that it is possible that it is beyond our reach? There are such things as infinity and eternity which have to be considered—absolute ideas that can not be dispensed with, and yet absolutely ungraspable by the human intellect. The phenomena of life itself seem in some respects to be among those of which we may be unable to fully obtain the secret. It would be more discouraging to think that we can solve all questions and research thus come to an end, than to believe that there is always to be something ahead of us. The so-called optimism that claims that the whole universe is to be included within the horizon of our senses seems to us little less than irrational, and what is here called pessimism seems altogether more becoming to our limited intellect. It is not pessimism, however, to believe that with our better developed intellects of one thousand years from now there will be as much prospect of future discovery as at the present time.

HYDROPHOBIA.

The recent death of the eight-year-old child of a prominent physician in New York ought to be sufficient to convince the most rabid oppositionist of the existence of the disease that it is really a formidable

entity. The case was seen by some of the best specialists in New York, the diagnosis confirmed and the history of the case thoroughly reviewed. Of course, those who believe that dogs should suffer no inconvenience though human beings may die, as we see in the tone of the antivivisectionist publications, would be satisfied with nothing, but at least such physicians as have criticised the views of those who believed in hydrophobia ought to accept this evidence. The important thing about it, however, is not the mere question of the existence of hydrophobia, but the increasing prevalence of the disorder. There seems good reason to believe that there are more cases in late years than there formerly were. This is not difficult to explain when we remember that hardly anything has been done to check it; that mad dogs have existed from year to year, biting others; that restrictive measures like muzzling are in most cases neglected, and that the public has been criminally indifferent on the subject. In England up to a year or two ago the dog-muzzling law was enforced, and as a consequence hydrophobia is almost unknown in that country. We have a larger territory to guard, and it would be more difficult to keep the disease out of any one single section than it is to keep it out of an island where all commercial routes are by water, through well-known channels, custom houses, ports, etc. But still much can be done, not only in our cities, but also in the rural districts, if the popular notions about dogs were only somewhat modified. They are not the friends of humanity in the long run that they are said to be, and there is a vastly greater number of them in existence than is justified by any requirement or good policy. The poorer the family the more dogs, as a rule, in the rural districts, and the greater the risk when rabies occurs among them. In the far north where dogs are useful domestic animals rabies or something so similar that it is practically identical, decimates the packs annually, and is recognized by the natives and duly feared. There are no records, of course, among the Eskimos, of any human beings having suffered there, but there is little doubt that such has been the case. In some countries, like Australia, it seems never to have been introduced. There is ample proof that it is a preventable disease and it would be well to bear in mind this fact, and insist on greater care in enforcing the taxing and muzzling of dogs, even to the extent of appreciably diminishing their number. The loss of a single human life from hydrophobia is of more importance than the death of thousands of canine quadrupeds.

Medical News.

CALIFORNIA.

Personal.—Dr. Elliott H. Woolsey, Oakland, and wife sailed on a trip to Japan, China and the Philippine Islands, March 11. He expects to return in about six months.

Quarantine Lifted.—As no new cases of scarlet fever had been reported at Marysville for ten days, the regulations prohibiting public gatherings were suspended March 11, and the schools reopened March 16.

Hospital Election.—The Sequoia Hospital Association (Eureka) has elected the following officers: President, Dr. Jay L. McLaren; vice-president, Dr. William H. Wallace; treasurer, Dr. Rae Felt, and secretary, Dr. Charles C. Falk.

Savage Amendment Fails.—The senate, by a vote of 18 to 17, defeated Senator Savage's bill to amend the medical practice act by taking the power of appointing the State Board of Medical Examiners from the state medical societies and vesting it in the governor.

"Divine Healer" Arrested.—John Miller, calling himself "Dr. Miller, the Divine Healer," of Bakersfield, was arrested, March 4, charged with practicing medicine without a license and released under a bond of \$50. He failed to appear March 6, his bond was forfeited and he was arrested and placed in jail.

ILLINOIS.

Beverly Farm Improvements.—Dr. William H. C. Smith, superintendent of the Beverly Farm Home and School for Nervous and Backward Children at Godfrey, is building a log cabin as a rendezvous for his boys, and also a schoolhouse, gymnasium and dormitory for the children under ten, to cost about \$4,000.

Keeley Company Sued.—The Memphis Keeley Institute has brought suit against the Leslie E. Keeley Company of Dwight, for \$100,000 for violation of contract. The plaintiffs paid \$50,000 for the sole and exclusive use of the so-called chlorid gold treatment in Tennessee, and was to be furnished the medicine at a discount of 40 per cent. The plaintiffs also allege that the defendant sold double chlorid of gold remedies, which were different in their constituent and component parts from chlorid of gold remedies. The drugs "are deleterious and dangerous to health of the patient," says the bill, "bringing about great physical weakness, dilation of the eyes, dryness of the throat, full feeling in the head, often confusion of ideas, impairment of memory and weakness of mental capacity."

Chicago.

Lorenz's Assistant to Locate.—Dr. Friedreich Mueller, former assistant to Dr. Lorenz, has returned to Chicago, and the daily press announces that he will locate permanently here and practice his specialty of orthopedic surgery.

The Worst Over.—Although eleven cases of smallpox were discovered during the week, the belief is expressed by the chief medical inspector, Dr. Heman Spalding, that the "worst is over for this season." The usual features of never vaccinated, disproportionate excess of colored and of children under the school age still obtain. Of the 24 fatal cases during the year, 19 were of children under 6 years of age, while there has not been a single fatal case for years among the vaccinated school population.

The Dead.—During the week ended March 31, 612 deaths were reported, 19 less than for the previous week and 75 more than for the corresponding week of 1902. The 19 fewer deaths are equivalent to a reduction of not quite 3 per cent (2.98) from the rate of the previous week, but the total, 612, represents an excess of 10 per cent. over that of the corresponding week of last year. Pneumonia heads the death-list with 133, and tuberculosis comes next with 62. Heart disease caused 44 deaths; Bright's disease, 34; typhoid fever, 13; influenza, 13, and violence, 40.

Improvement in Public Health.—Indications from the laboratory and reports from physicians and hospitals point to a general improvement of the public health. Influenza is still rampant and is largely responsible for the higher death rate of the winter. It continues to be reported as a fatal complication of consumption, Bright's disease, pneumonia and heart disease among the aged and of the acute contagious diseases of childhood. Measles and whooping cough are still very prevalent and of unusual malignancy, while diphtheria and scarlet fever are decreasing.

Increase in Pulmonary Disease Mortality.—In the report of the Department of Health for the week ended March 21, the following reference is made to the increase in mortality from pneumonia and tuberculosis:

March 21, there had been registered a total of 679 deaths from consumption and of 1,455 deaths from pneumonia since the first of the year. During the corresponding period of 1902 the respective totals were 619 consumption and 1,095 pneumonia.

These figures show increases of 9.6 per cent. of consumption mortality and 32.8 per cent. of pneumonia mortality. And they also show that the excess of pneumonia mortality over consumption mortality—which was 76 per cent. in 1902—has risen to 114 per cent. this year.

INDIANA.

Alexander Again Indicted.—On March 13 the grand jury returned a new indictment against Dr. Joseph Alexander, at whose previous trial on the charge of grave-robbing, the jury disagreed.

School Children Must Be Vaccinated.—The decision of the Appellate Court, March 18, upholding the power of school boards to compel the vaccination of children, will be followed by rigid enforcement of vaccination throughout the state. Dr. Hurty, secretary of the State Board of Health, has detailed his reasons for the belief that the state will be scourged with smallpox unless radical measures are enforced.

The State Morbidity.—The regular monthly reports to the State Board of Health show that influenza prevailed very extensively in February. The type was severe and seemed most frequently to leave an impression on the nervous system. Smallpox was very slightly less prevalent than in the preceding month, there being 889 cases in 59 counties. Bronchitis and tonsillitis were widely spread, and diphtheria increased slightly.

License Revoked.—The State Board of Medical Examination and Registration has revoked the license of Daniel D. Weiser, Bourbon, who failed to appear and show cause why his license should not be revoked. Weiser had an old license, procured prior to the establishment of the present board, by displaying a diploma which he claimed was granted by a reputable college, when in fact it was bought from a diploma mill, and was not a result of study. He applied to the present board at the time of its establishment for a new license and was refused for these reasons. He then went to Michigan. He returned, recently, took the old license to the county clerk and received a new one.

Deaths in the State.—The total number of deaths was 2,677, an annual rate of 13.8 per 1,000. This is a decrease as compared with the same month of last year. Pneumonia caused 339 deaths; tuberculosis, 342; cancer, 92; influenza, 56; diphtheria, 53; smallpox, 50; and typhoid fever, 49. The city death rate was 17.3, which is 3.5 higher than the average rate for the whole state. Exactly the same rate existed in February, 1902. The country death rate was 11.9, which is 1.9 less than the state average, and 1.7 less than in the same month last year. Consumption prevailed more extensively in the cities than in the country, the rate being respectively 195.4 and 137.8 per 100,000. Pneumonia also prevailed more extensively in the cities, with rate of 236.4, and country 190.4. Of the smallpox deaths 43 occurred in the cities, 38 of which were in Indianapolis and 7 in the country. Of the 92 deaths from cancer 44 occurred in the cities and 48 in the country.

Laboratory Bill Vetoed.—The action of Governor Durbin, according to the newspapers, in vetoing the Ogborn state laboratory bill, is receiving severe criticism by members of the medical profession. Some charge, it is said, that personal matters influenced the action of the governor for there was no serious opposition to the bill from any quarter. The bill passed the house by a vote of 77 to 13 and the senate by a vote of 44 to 6. It had the endorsement of the Marion County Medical Society and the State Medical and the State Pharmaceutical Associations. The bill carried an annual appropriation of \$10,000 for maintenance. The laboratory was to have been used to enforce the state's pure food law, which at present lies dead on the statute books, while the people of Indiana pay probably not less than \$5,000,000 a year for adulterated foods. It was expected that the laboratory, which was to be conducted under the direction of the State Board of Health, would also be used in the early discovery of diphtheria, consumption and other similar diseases.

MARYLAND.

Baltimore.

Alumni Elect.—Mr. B. Howard Haman, LL.B., has been elected President of the General Alumni Association of the University of Maryland, and Dr. Eugene F. Cordell, secretary-treasurer.

Woman Gets High Mark.—At the recent examinations before the State Board of Medical Examiners, the highest honors were carried off for the second time by a graduate of the Woman's Medical College.

Left to Hospitals.—The will of the late Mrs. Lavinia E. Frey leaves \$500 each to the Union Protestant Infirmary, the Nursery and Child's Hospital, and the Presbyterian Eye, Ear and Throat Charity Hospital.

Deaths of Last Week.—The number of deaths last week was lower than for several years past, being only 184, an annual mortality rate of 17.66 per 1,000, viz., for the white 14.87, and for the colored 32.97. Eight deaths were from grip, 28 from pneumonia, and 3 from measles.

Medical History.—At the Johns Hopkins Hospital Historical Club, Prof. Henry E. Shepherd delivered an address on "Medi-

cine in Shakespeare," and Dr. Julius Friedenwald brought out the fact that Dr. Philip Syng Physick of Philadelphia discovered and was the first to make use of the stomach tube. Dr. Thomas McCrae spoke on "George Cheyne—An Old London and Bath Physician (1671-1743)."

The Book and Journal Club of the Medical and Chirurgical Faculty.—At the first meeting for the season, March 26, Dr. Alfred Stengel of Philadelphia, read a paper on "Some Old Instruments and Methods for Treatment of the Stomach Gastric Sensations Interpreted as Live Animals in the Stomach." Dr. William Osler presented the library with 123 theses of American students at the University of Edinburgh between 1760 and 1810, and Dr. Henry B. Jacobs made a few remarks on "A Century of the Faculty of Medicine of Paris, 1794-1894."

MINNESOTA.

Personal.—Dr. Oscar A. Burton, Albert Lea, will leave in May for several months of study in Vienna.—Dr. Carl J. Ringnell, Minneapolis, has been reappointed a member of the State Board of Medical Examiners.

The Open Door.—A bill introduced in the legislature March 4 allows the State Board of Medical Examiners to grant licenses without any examination to physicians already licensed in some other state which has a standard equal to that of Minnesota. Each applicant for a license must pay a fee of \$10, which the board may retain, regardless of the results of examination. It is made the duty of every county attorney to prosecute cases of practice without license whenever requested so to do by the board of examiners or any five of its members.

MISSOURI.

Library to Society.—The widow of Dr. Marcus A. Bogie, Kansas City, has given his valuable medical library to the Jackson County Medical Society.

Personal.—Dr. Harry F. Ferrel, St. Louis, has been commissioned first lieutenant and assistant surgeon, N. G. M.—Dr. Moritz F. Weymann, in compliance with a request made by the board of directors of the Central Medical College, St. Joseph, has resigned as president and from the teaching force of the institution. Dr. O. Beverly Campbell was elected president for the unexpired term.

Testimonial Banquet.—The St. Louis Medical Society will give a banquet, April 14, in honor of Drs. Simon Pollak, William Johnston, William M. McPheeters and J. B. Johnson, all ex-presidents of the society, and all over 86 years old. Dr. Simon Pollak is the oldest, the banquet being given on his eighty-ninth birthday. A large attendance is assured and the occasion is expected to be a most enjoyable one. Tickets to the banquet will cost \$5 each and can be secured by addressing Dr. Frank L. Henderson, Century Building, St. Louis.

Damage Suits.—Dr. Charles M. Coe, Kansas City, has been sued for \$10,000 damages by Miss Minnie Bell of Saline County, who alleges permanent impairment of health and aggravation of disease by reason of the defendant's carelessness, negligence, etc.—University Medical College, University College Training School, Dr. Flavel B. Tiffany and Louis C. James, Kansas City, are made defendants in a damage suit for \$5,000, filed by Mrs. Josephine Duzan, who claims that her husband's death was due to lack of proper treatment on the part of his attendants.

Street-Car Colds.—At a meeting of the St. Louis Medical Society, February 28, Dr. Fayette C. Ewing read a paper on "Street-Car Colds," and offered the following resolutions, which were unanimously adopted by the society:

Recognizing the fact that many colds and diseases of the respiratory organs are acquired by riding in draughty, ill-ventilated, cold and crowded street cars, wherein the element of time conspires to produce a prolonged chilling of the body, terminating in localized congestion and consequent respiratory catarrhal affections, it is hereby declared to be the sense of the St. Louis Medical Society that street car officials should take measures for a more uniform and equable temperature in their cars, with protection against draughts, and especially in such cars as run far out into the suburbs, where passengers must sit still for an extended period of time. And it is further declared that such lines of cars as make long runs, compelling long-distance passengers to endure a temperature under 60°, be condemned as dangerous and a menace to the health of their passengers and their patrons, who are hereby warned to seek other means of conveyance.

NEW YORK.

Carnegie's Gift to Ithaca.—The offer of Andrew Carnegie to defray the expense of the new filtration plant at Cornell University, Ithaca, which will amount to about \$150,000, has been accepted by the university.

Elsberg Bill Passes Senate.—The bill providing for the abolition of the coroner's office in New York, Kings, Queens and

Richmond counties was passed by the senate, March 18, by a vote of 29 to 17. Senator Elsberg, who introduced the bill, was openly charged with having been actuated in this matter solely by personal spite.

Preventable Disease Mortality.—The mortality from preventable diseases during the year 1902 was 14 per cent. of the total, which was above the average of the last few years. This increase was largely attributed to the prevalence of smallpox, 442 of the deaths being from this cause. Typhoid fever caused 1,318 deaths, or 300 less than the average, and pulmonary tuberculosis 12,582, as against 13,270, the average for the past five years. The work of the Bureau of Pathology and Bacteriology seems to be appreciated, for the report states that applications for examinations of samples of water are becoming more and more numerous. The calls for the examination of foods and drugs can not be met without a greater appropriation from the legislature.

New York City.

The will of Dr. T. Gaillard Thomas has been filed for probate. It is believed that the value of the estate is about one million dollars. It is to be divided into thirds, one-third going to the widow and one to each of the sons.

Fighting Glanders.—The health commissioner has asked for an appropriation of \$5,000 to enable the department to stamp out glanders, which is prevalent among the horses in the city. The disease was first discovered in an uptown boarding stable, and it was then learned that horses had been dying there of glanders for months, but no report had been made. It is said that from five to ten cases are reported daily in this city at the present time, and that the disease is also prevalent in the outlying districts. One man, a cigar maker, who is not known to have had any communication with horses, died of the disease at the Metropolitan Hospital.

Rabies Prevalent.—The recent death from rabies of Dr. Henry P. Loomis' son has directed attention to the prevalence of this disease not only among dogs but horses. Several well-known veterinary surgeons are responsible for the statement that several cases of rabies among horses had recently come to their notice. According to Dr. William H. Park of the health department, two physicians practicing on the West Side lost their horses on the same day from rabies. There have been four deaths from hydrophobia in this city in the past twelve months, and within the past few weeks no less than 13 persons have received the Pasteur treatment from the board of health.

Gifts to Hospitals.—The Manhattan Eye and Ear Hospital has received from the widow and children of Gen. Samuel Thomas a gift of \$50,000, thus raising the new building fund to \$100,000. The institution has outgrown its present quarters and desires to have a new building in the vicinity of Second Avenue and Fifty-ninth Street.—J. Rogers Maxwell has just offered to build, at his own expense, the two central sections of the proposed new building of the Long Island College Hospital as a memorial to his brother, Henry W. Maxwell, who was for a long time closely identified with the interests of the hospital. These two sections will form the main building on Henry Street. The buildings, when completed, will cost about one million dollars.

Buffalo.

Money for General Hospital.—William E. Brown has donated \$10,000 for the Buffalo General Hospital.

The February Report.—The monthly report of the department of health for February shows a death-rate of 14.96 per 1,000 a year. The principal causes of death were as follows: Consumption, 43; diphtheria, 8; typhoid fever, 14; debility, 45; cancer, 21; apoplexy, 19; meningitis, 11; valvular heart disease, 20; pneumonia, 53; appendicitis, 6; cirrhosis of the liver, 7; gastroenteritis, 7; diabetes, 3; nephritis, 32, and violence, 24. The total deaths for February were 474, as compared to 392 for February, 1902.

PENNSYLVANIA.

Philadelphia.

Bills Defeated.—The Blumle bill to reward mothers of large families with gold medals and cash prizes and the Keppler antimiscegenation bill were both recently defeated in the lower branch of the legislature.

Resigns After Long Service.—Miss Marion A. Smith has resigned as directress of the Philadelphia Hospital Training School for Nurses after sixteen years' service to accept the superintendency in the University of Pennsylvania Hospital.

Contract Awarded.—At a recent meeting of the board of trustees of the Jefferson Medical College Hospital, the contract for the foundation and the structural steel work, as far as the first floor, was awarded for \$99,485. The work will soon begin.

Homeopathic Hospital Postponed.—City councils have decided to postpone further consideration of the proposition to establish a city homeopathic hospital at the site of the present Municipal Hospital when the latter is removed to its new site in the Thirty-third ward.

Vital Statistics.—Typhoid fever showed a decrease for the week ended March 21, there being 74 fewer cases than in the preceding week. The total number of deaths from all causes was 535, as compared with 577 for the previous week, and 476 for the corresponding week of 1902.

Bequests.—The recent adjudication of the estate of William McClary shows a large number of charitable bequests, among them \$5,000 to each of the following hospitals for the endowment of free beds: Protestant Episcopal, Presbyterian, German, St. Joseph's and Samaritan hospitals. From a balance in the estate of J. Alfred Kay the following legacies were allowed: \$5,000 each to the Pennsylvania, Germantown, Jefferson, University of Pennsylvania, Orthopedic and Polyclinic hospitals; to the German, St. Agnes', St. Joseph's, Gynecean, Howard, Medico-Chirurgical, Jewish, Hahnemann and Presbyterian hospitals, \$1,000 each; a like amount went to the Philadelphia Dispensary and to the Howard Hospital and Infirmary for Incurables. One-sixth of the residuary estate not named is divided among the Pennsylvania, Jefferson, Germantown, University of Pennsylvania, Orthopedic, and Polyclinic hospitals.

UTAH.

Smallpox in State School.—Several cases of smallpox have been discovered in the Utah State School for the Deaf and Dumb and the institution has been placed under strict quarantine.

Want Medical School.—Physicians of Salt Lake City propose a medical college in connection with the state university. They have asked the board of regents of the university to co-operate and, if a favorable reply is received, the legislature will be asked to make an appropriation to establish this department.

Alleged X-Ray Injuries.—A. K. Hicks has brought suit for \$20,000 damages against Dr. Samuel H. Pinkerton, Salt Lake City, alleging "negligent, careless and unskilful treatment of a gunshot wound with x-rays" whereby the flesh and bone of plaintiff's left leg is said to have been "burned, injured and destroyed."

Salt Lake City's Deaths.—The mortality of Salt Lake City for 1902 was 849, corresponding to an annual death rate per 1,000, of 11.32. The birth-rate for the same period was 16.98 per 1,000. Pneumonia caused 74 deaths; tuberculosis, 43; bronchitis, 24; Bright's disease, 40; heart disease, 49; meningitis, 36; paralysis, 38; diarrhea and enteritis, 45; appendicitis and peritonitis, 21; cancer, 29; diphtheria, 39; scarlet fever, 36 and typhoid fever, 28.

Contagious Diseases in Salt Lake City.—During 1902, 1,573 cases of contagious and infectious disease were reported, the mortality from which made up nearly 13 per cent. of the total mortality. There were 443 cases of scarlet fever with 36 deaths; 251 of diphtheria with 39 deaths; 97 of smallpox with one death; 167 of typhoid fever with 28 deaths; 507 of measles with 4 deaths; 101 of chickenpox without a death, and 7 cases of whooping cough with one death.

Mental Hospital Bill Progresses.—Mr. Spry's mental hospital bill passed the house. It provides for an assistant physician and other additional help, for daily visits by a physician to each patient; it changes the form of examination, provides for the limitation of commitment, allows no special care to be given to any inmate for extra pay and incorporates the most modern ideas of hospital treatment, regarding the insane as sick. The words "arrest" and "conviction" are no longer used.

WASHINGTON.

Physician's Office Robbed.—Burglars recently entered the office of Dr. Guy S. Peterkin, Seattle, and secured \$184 from his desk.

Forfeited His Bond.—F. C. Goodale, Spokane, charged with practicing medicine without a license, failed to appear, March 5, for trial, and his bond was forfeited.

Grip Epidemic in Tacoma.—Influenza is said to be epidemic in Tacoma. The rules for its prevention as summarized there are: Nourishing food; plenty of sleep; cleanliness of person and avoidance of stimulants.

Smallpox at Colfax.—Colfax has 16 cases of smallpox, not 31, as was reported. Schools have been closed, public gatherings interdicted and children are not allowed on the streets. It is noted that the disease is confined to boys between 16 and 19 years of age.

WISCONSIN.

Diploma Stolen.—The diploma of Dr. Adolph Roos, Oshkosh, was recently stolen from his office.

Schools Closed.—On account of the prevalence of varioloid, diphtheria and scarlet fever in Baraboo, the local schools have been closed.

Emergency Hospital's Work.—The report of Emergency Hospital, Milwaukee, for the past year shows that 910 cases were treated, 819 of the patients being males, and 655 of the cases surgical. In 9 cases the patient died before reaching the hospital.

Personal.—Dr. Richard Schorse, Milwaukee, has been appointed resident physician at the University of Pennsylvania Hospital, Philadelphia. Dr. Richard Dewey, Wauwatosa, has been elected president of the honorary medical staff of the Milwaukee County Hospital for the Chronic Insane. Dr. Arthur J. Patek has been selected as chief of the attending staff, and Dr. Alfred H. Levings, chief of the consulting staff of the Jewish Hospital. Dr. B. C. Gudden has associated with him in the management of the Oshkosh Clinic, Dr. J. A. Crum.

In the Hands of the Law.—C. B. Savnac, an itinerant corn doctor, has been arrested at Green Bay, charged with practicing medicine without a license. Dr. George G. Gregory is held in jail at Madison, awaiting the extradition papers from Michigan, where he is wanted on a charge of perjury. Dr. B. Fowler Baker, Milwaukee, charged with violating the health law, was arraigned in the District Court, March 5, and his case continued until March 14. Louis Tauvar, an Italian dentist of Marinette, was arrested recently, charged with practicing medicine without a license.

GENERAL.

American Beds in French Hospital.—Victoria Hospital, Nice, France, has received \$2,500 from Mrs. Robert Goelet, New York, to endow an American bed. Another was endowed by Andrew Carnegie five years ago.

A Merited Promotion.—By a special act of congress Major William C. Gorgas, surgeon U. S. Army, who made so brilliant a record by his sanitary work in Havana, has been promoted to colonel and assistant surgeon-general.

New Red Cross Head.—Rear Admiral William K. Van Reypen, U. S. N., retired, former surgeon general of the Navy, has been named as the successor of Miss Clara Barton as president of the American National Red Cross Society.

Promotions Prior to Retirement.—The Army papers announce that preliminary to retirement Colonels Charles Smart, Peter J. A. Cleary, Henry Lippincott and Calvin De Witt, assistant surgeons-general, are to be promoted to the rank of brigadier-general.

Plague Continues to Decrease.—The use of the Haffkine, and especially the Yersin, serum, in Mazatlan are putting a decided check on the fatality of the plague. Deaths average only from one to three a day now. Some days there are none. Up to March 13 the total number of cases was 313 and the deaths 255. About \$130,000 has been thus far spent in relief of the needy. Without the money contributions it would have been impossible to proceed with the wholesale destruction of infected houses and other measures that fall heavily on the poorer classes. Plague now exists at Villa Union, Siquieros and Rosario.

FOREIGN.

Smallpox in Trinidad.—This island is suffering from an epidemic of smallpox, widespread and rapidly extending.

Russian Medical Students at Berne.—The Russian medical students at Berne, both male and female, far outnumber those of Swiss and other nationalities. The Swiss claim that they are crowded out and demand measures to regulate this influx of Russians.

Changes in the German Universities.—Dr. Hackenbruch has been invited to take charge of St. Joseph Hospital at Wiesbaden in the place of the late Professor Cramer. Kreibich of Vienna has been appointed professor of dermatology, and von Hacker of Innsbruck, professor of surgery at Graz.

Trachoma Prevents Visitors' Return.—Some travelers in Italy are refused transportation back to America because they

are afflicted with trachoma and the authorities fear that others on shipboard might take the disease. They are said to be American citizens and to take their detainment in ill humor.

Honors for Koch.—The Paris Académie des Sciences recently voted for a foreign associate member in the place of Virchow. The names proposed were: Robert Koch of Berlin, Agassiz of Harvard, Langley of Washington, and Van der Vals of Amsterdam. Koch was chosen, having received 26 and Agassiz 18 votes.

Russian Isolation Houses.—St. Petersburg will soon celebrate its two hundredth anniversary by the erection of a stone building to serve as a temporary home for the healthy inmates of infected houses while the latter are being disinfected. It will accommodate 100. There are already three such buildings, with a capacity of forty each.

Responsibility for Erysipelas in a Hospital.—Our Russian exchanges mention that the widow of an Odessa architect has sued Dr. Jansen and the managers of a hospital at Berlin for nearly \$50,000. The architect entered the hospital for an operation, which was successful, but he contracted erysipelas, to which he rapidly succumbed. The widow claims that the erysipelas might have been prevented by due care.

Institute for Post-Graduate Courses at Berlin.—The organization of the free post-graduate courses which are now being held each year in twenty-three large cities in Germany owes its inception to the late Empress Frederick. It is now proposed to found a special institute in Berlin as a memorial to the empress, which will serve as a center for the movement and for housing the collections, etc., which can thence be dispatched as needed.

Baudouin at the St. Louis Exposition.—Dr. Marcel Baudouin of Paris has been made a member of the committee on admissions to the St. Louis Exposition and expects to remain in this country several months. He is the founder of the unique "Institut de Bibliographie," also the editor of the "Gazette Méd. de Paris" and the "Bibliographia Medica." He is the moving spirit in the "Agence de la Presse Scientifique Internationale" and has published several important works alone or in collaboration with others. He visited this country at the time of the Columbian Exposition.

Burlesque Number of the "Munich Med. Wochenschrift."—This interesting "Scherznummer" is equal to its five annual predecessors. Recent occurrences in Germany afford apt subjects for satire. One communication, purporting to be from Nardenkötter's clinic, is entitled "The Bath Tub in the Pharmacopeia." It refers to the fact established at the trial of this charlatan that he compounded his medicines in the family bath tub. "A Rare Case of Pneumonia" is described in detail, evidently copied verbatim from the latest text-book. Its rarity was due to the slimmness of the writer's practice. "Progress in Homeopathy" describes the limitations hitherto imposed on homeopaths by the difficulty of writing figures with as many ciphers as are necessary to express their dilutions. This has been remedied now by substituting for the figures the figure representing the quantity of ink required to write them. Further progress has also been realized by the results obtained with river water, to which one drop of the mother dilution of croton oil was added several miles above. After drinking six quarts of this river water in twenty minutes, diuresis was promoted to a remarkable extent, thus establishing the hitherto unsuspected value of croton oil as a diuretic when administered on the Hahnemannian principles. "Metallo-discotherapy in Nervous Affections," portrays the remarkable benefit to be derived in inanition and nervous depression, by application of a silver or gold disc, bearing the impress of the mint, and applied to the chest in a leather bag like the "mercolint aprons." One article announces that the sick-benefit societies will soon be able to dispense with nearly all their professional medical assistance, as they are planning to introduce the plan of treating all the sick by streets. All in the first street will be treated by sun baths; on the second by hypnosis; on the third by bromids and opium; on the fourth by mercurial inunctions, and so on. A new infallible remedy for constipation is announced. The patient swallows a silver ball fastened to a celluloid thread wound on a spool. The course of the ball is traced by radiography, and when it emerges the length of the alimentary canal can be estimated by the thread. It is left in the body, the upper end tied to the ear, and the permeability of the intestinal canal can be maintained by sawing it back and forth. It is possible also to clean out the alimentary canal by tying a brush to the thread and pulling it through. The idea of the thread is patented under the

name "Entero-cathartor." Among the advertisements we note that of the new prepared food "Sana," said to be recommended by Hippocrates where he wrote: "Alens sanus in corpore sana," viz., "That man alone is healthy who has sana in his body."

LONDON LETTER.

The Regulation of Cremation.

A report has been issued by a departmental committee appointed by the home secretary to prepare regulations to be made under the Cremation Act passed last year. The object was to frame regulations which, while avoiding unnecessary restrictions such as might discourage cremation, would reduce to a minimum the risk of cremation being used to destroy the evidence of murder. The committee studied the records of cases of murder in which evidence had been obtained by the exhumation of the remains, and directed special attention to the certificates or other evidence of the cause of death that had been produced before the burial. They disclaim the idea that any possible restrictions can guard completely against the risk of cremation being used for the concealment of crime. But they think that regulations can be framed which will so far reduce the risk as to make cremation at least as safe as burial. The committee has come to the conclusion that the person to decide on the cremation should be a medical referee, specially qualified for the work and appointed by the cremation authority. Before cremation is permitted there should in every case be a personal inquiry by someone beside the medical attendant of the deceased. If the medical referee can not make the actual inquiry there ought to be a second certificate by an independent person, who should be a medical man, either nominated for the purpose by the cremation authority or holding one or other of the following appointments: Medical officer of health, police surgeon, certifying factory surgeon, medical referee under the workmen's compensation act, or physician or surgeon to a large public general hospital. In every case there should be required either (1) two certificates, one given by the medical attendant, the other by an independent person—the medical referee, or a doctor nominated by the cremation authority, or a person holding one of the public appointments mentioned above; or (2) a certificate given after a postmortem by a pathologist named by the cremation authority, who may or may not be the medical referee; or (3) a certificate by a coroner given after an inquest. If the certificates under heading 1 do not show the cause of death definitely and in such terms as to exclude the possibility of poison or violence as the cause of death, the cremation should not be allowed unless a postmortem has been held and a certificate given as under 2. If this does not sufficiently reveal the cause of death, and if the relatives still desire cremation, there must be an inquest. The postmortem should be made by a pathologist, nominated by the cremation authority, who should be a person accustomed to make postmortem examinations. The medical attendant of the deceased, or some other medical representative of the applicant for cremation should be allowed to be present. If, though the cause of death be definitely ascertained, there still remain any suspicious circumstances in the case, the coroner should be referred to, and where a case has been referred to the coroner, cremation should not take place unless, after holding an inquest, he can give a certificate stating definitely that no circumstance exists which could render necessary any further examination of the remains.

Mistakes in the Diagnosis of Infectious Diseases.

The committee of the Metropolitan Asylums Board has issued a most interesting report showing the cases of mistaken diagnosis sent to their board's hospitals during the last three years. In 1899 1,583 cases were sent which were not notifiable diseases—a percentage of mistakes of 6.3. In 1900 the number was 1,706, a percentage of 7.9; and in 1901 the number was 2,365—a percentage of 9.2. The percentage on the total cases for scarlet fever, 5.6; diphtheria 12.8, and typhoid fever 25.5. Among the diseases diagnosed as scarlet fever were measles, rubella, tonsillitis and erythema. Measles was returned as diphtheria in 47 cases, and tonsillitis as diphtheria in 880 cases. Among the cases wrongly certified as typhoid fever were 13 of influenza, 22 of febricula, 9 of bronchitis, and 86 of pneumonia. Of notified cases of smallpox the diagnosis was mistaken in 13 per cent. of the cases.

Poisoning by Illuminating Gas.

The modern method of mixing coal gas with "water gas" greatly increases the amount of carbon monoxid in the gas supplied for illumination. Hence an alarming increase in the number of cases of carbon monoxid poisoning has recently

taken place. The latest fatality has been reported from Dublin where a man and his wife were found asphyxiated in their room—the former in a dying state, the latter dead. Prof. E. J. McWeeney examined the blood and found it was saturated with carbon monoxid and gave the spectroscopic indication. Within a short period 6 deaths from this cause have occurred in Dublin. In this particular case the bedroom was insufficiently ventilated and the deceased came from a remote town in Ireland where gas had not been introduced. No doubt their want of familiarity with its use was a source of danger.

Typhoid Fever from Sewage Contaminated Shell Fish.

We have already briefly referred to this subject in THE JOURNAL. As long as twenty-three years ago Sir Charles Cameron, health officer of the City of Dublin, read a paper at the British Medical Association on "Typhoid from Oysters," but the subject attracted no attention until 1895, when it was revived by Sir William Broadbent, who recorded a number of cases of typhoid fever which he attributed to contaminated oysters. In 1896 Dr. Bulstrode, Dr. Klein and the late Sir R. Thorne Thorne reported to the government on the question and, as a result, a bill to regulate the oyster trade was introduced into parliament. But it was withdrawn owing to certain administrative difficulties. Interest in the subject again languished until the recent outbreaks of typhoid fever in several parts of England, attributed to shell fish. In London a scare has been produced and the oyster trade almost completely paralyzed by the publication of the medical officer of health's report. Four cases of typhoid fever were brought under his notice which appeared to be due to cockles bought at the great fish market of Billingsgate. In samples of these cockles Dr. Klein, the bacteriologist, found evidence of sewage contamination—the *Bacillus coli communis*, and spores of the virulent *Bacillus enteritidis sporogenes* in abundance. From one cockle he isolated the typhoid bacillus. Even "cooked" cockles contained numerous living organisms. These mollusks are not boiled sufficiently long to raise their interior to 160 F.—at which the typhoid bacillus and all the bacilli of the colon group perish—because they would be rendered tough and unsaleable. It appears that the whole estuary of the Thames is polluted by sewage. Hence, not only shell fish but sprats, whitebait and smelts, which are eaten "uncleaned," must be a source of danger. Numerous other outbreaks of typhoid fever have been traced to cockles. In 1902 twenty-six cases occurred in Westminster. An outbreak of typhoid fever, due to oysters, occurred at Winchester. After a banquet on November 10 ten persons were attacked on the same evening with violent diarrhea and the illness developed into typhoid fever. As it was not thought possible for the disease to have been conveyed by cooked food suspicion fell on the oysters. All the ten patients had eaten them, though several other persons had also done so with impunity. Investigation showed that the sewage of the town of Emsworth entered the river only fifty yards from the oyster pits and practically flowed over them. Dr. Klein found excrementitious matter, but not the typhoid bacillus, in the oysters and in the water taken from the pits. About the same time an outbreak of thirteen cases of typhoid occurred at Portsmouth, and several of the patients had eaten oysters from the same pits. Subsequently Dr. Klein examined eighteen samples of oysters taken from five different fisheries and found eleven contaminated with sewage. The medical officer of health of London strongly urges the necessity for legislation to prevent the contamination of shell-fish by sewage.

The Liverpool School of Tropical Medicine and the Prevention of Malaria.

The energetic Liverpool School of Tropical Medicine has drawn up a set of simple instructions for the prevention of malaria to serve as a guide to Europeans living in tropical countries. They are advised to invariably sleep within mosquito curtains of a mesh of not less than ten holes to the inch and to tuck on a piece of material all around the net above the level of the mattress, so as to protect the limbs from bites through the net during sleep. Mosquito boots to protect the ankles during sleep are also recommended. At least 15 gr. of quinin should be taken weekly. The quarters provided for the European members of a firm should possess at least one sitting room or portion of a veranda securely protected by screens of wire gauze against the entry of mosquitos. This should be the room commonly used by the inmates from sunset to bedtime. The office and dining room should be provided with punkahs or electric fans, to be used during office hours and during meals. The premises of the firm should be provided with at least one rubbish bin (with a

cover). All cisterns and other vessels for the storage of water should be furnished with accurately fitting covers and wire-gauze caps to the pipes for the purpose of excluding mosquitos. All open and permanent collections of water really required for irrigation, washing or other purposes should be treated once a week with kerosene oil for the destruction of larvæ. The school also intends to arrange a course of lectures on the prevention of tropical diseases for clerks, missionaries and others proceeding to the tropics. Each course will consist of five lectures, extending over two weeks in the months of January, May and November.

Smallpox in England.

Cases of smallpox continue to occur in various parts of the north of England. Over 300 cases are under treatment in Liverpool, and the disease is also rife in Salford and Leeds. It has also broken out in a jail at Birmingham. In the south of England six cases have occurred in one family in Devonshire. In London a man was found by the police in a dying condition in the streets. He was taken to an infirmary, where the cause of disease was found to be hemorrhagic smallpox.

Correspondence.

Tropical Medicine.

PHILADELPHIA, March 21, 1903.

To the Editor:—I am extremely glad to see your editorial on Tropical Medicine in the last issue of THE JOURNAL. I have been much pleased with the interest which has been shown in the study of tropical medicine and surgery of late in the United States. This winter, the Jefferson Medical College founded a lectureship, which was purely voluntary for the senior class, no examinations were held on it, nor was attendance essential to graduation. I expected, perhaps, that a dozen men would attend the lectures of Captain Kieffer of the Army, who gave the lectures for us. Instead of a dozen about 150 men (nearly the entire senior class) attended and showed the greatest possible interest in the subject. The junior class also requested the privilege of attending. The Washington Post-Graduate Medical School opened a similar course the following week, and I believe in Chicago a third course has been established.

This movement has been followed also by the organization of a Society for the Study of Tropical Medicine and Surgery in Philadelphia. Your suggestion that the American Medical Association can not overlook this subject in any future program is certainly wise. Not only is the profession in the sub-tropical portions of America interested in the subject most vitally, but our new possessions in Hawaii, the Philippines and Porto Rico, our very intimate affiliations with Cuba, and the very early establishment of the Panama Canal with a large population of Americans in Central America make it imperative that the Association should give considerable attention to this subject.

I trust that it will be brought before the Association at the New Orleans meeting by the proper authorities, and, as seems to me best, that a Section on Tropical Medicine and Surgery shall be established. It would be, I fear, an inefficient way to deal with a large subject to have it divided among a number of sections, medicine, surgery, pathology, ophthalmology, etc. This, however, is for the Association itself to decide. The main thing is that the subject shall be properly considered.

W. W. KLEN.

Michigan Students Protest.

ANN ARBOR, March 21, 1903.

To the Editor:—On behalf of the faculty and students of the Department of Medicine and Surgery of the University of Michigan I wish to enter a most vigorous protest against your editorial on page 787. [THE JOURNAL, March 21.] You endeavor to apparently keep within the bounds of truth and at the same time you give a wholly false impression. You start by saying that the students of "certain medical colleges of that state" (Michigan) have protested against the passage of the proposed medical act, and after very properly condemning the position of such students, you wind up with the following: "We hope the students of the Michigan medical colleges will

see the unwisdom of their action and assist, rather than oppose, those who are fighting for the elevation of the standard of the profession which they are about to enter." This statement implies that the protest against the passage of the act has been made by a large number of medical students in the schools of Michigan, and such an implication is not only unjust, but is absolutely false. The students of the Department of Medicine and Surgery of the University of Michigan are not politicians and have never attempted in any way to influence legislation. They are otherwise engaged and have no time to send delegations to Lansing. Moreover, both the student body and the faculty of this school are in favor of the proposed amendment, and the graduates of this school are perfectly willing that their record before the examining boards of this country should be compared with the records of any other medical school in the country. So far as I know the protest has come from only one medical school, and it is unfair for you to condemn the medical students in the schools of Michigan as a whole on account of the action taken by students from one school. When you make charges of the kind made in your editorial you should be more specific and exact.

Yours respectfully,

VICTOR C. VAUGHAN.

[Dr. Vaughan evidently has not kept in touch with what is going on in his state or he would not say that "the protest has come from only one medical school." We have positive information as regards four, and indirect regarding the other. (There are five colleges in the state aside from the University of Michigan.) As a rule the senior students, as those graduating this year would probably be exempt, are taking no action; and the faculties are generally against the students' actions. We are glad to know that the students of the Department of Medicine and Surgery of the University of Michigan are not among those who are protesting.—EDITOR.]

May We Not Secure Immunity from Fatal Chloroform Narcosis?

INDIANAPOLIS, March 19, 1903.

To the Editor:—Chloroform, pleasant to take, quickly producing thorough muscular relaxation and complete insensibility to pain, would be the ideal anesthetic were it not for the dangers attending its use. These dangers arise so quickly that the system is overwhelmed before the anesthetist realizes that death is impending. Fatalities occur, not necessarily when large amounts of chloroform are used, but when gasps and deep inspirations fill the innermost alveoli with the concentrated vapor. Various apparatuses have been devised to properly dilute the vapor, but none has been altogether satisfactory.

Parturient and pregnant women seldom, if ever, succumb to chloroform narcosis, for the following reasons:

1. In the parturient the central nervous system is in a state of congestion.

2. In both the pregnant and the parturient movement of the diaphragm is greatly restricted because of abdominal distension; therefore, breathing is necessarily shallow. As a consequence, chloroform would have to be given in very concentrated vapor, indeed, to prove dangerous to the patient, for it must be greatly diluted by admixtures with the residual air of the lungs previous to absorption and, in such cases, the shallow respiration would make it practically impossible to overwhelm the patient with an overdose in a few respirations.

In view of these facts, would it not be wise before the administration of chloroform to artificially restrict the movements of the diaphragm? An abdominal bandage, preferably an elastic bandage, would assure shallow breathing, and it would appear, secure at least the immunity from "drowning" in chloroform which belongs to the pregnant and the parturient.

H. W. DUDLEY, M.D.

Eye-Strain and the General Practitioner.

CHICAGO, March 23, 1903.

To the Editor:—Referring to your review in THE JOURNAL of March 14 of Dr. Gould's book, "Biographic Clinics," dealing with the question of eye-strain and its effects, I can not but think it unfortunate that you should adopt such a critical

attitude, because the general impression left in the mind of the reader will be that oculists are very prone to exaggerate the importance of eye-strain, and that in the absence of very direct indications the counsel of an oculist will be deemed superfluous and be dispensed with.

It may be that Dr. Gould's claims are excessive, but as a general practitioner I do most certainly know that not nearly enough of our patients are referred to the oculist. Provided that a conscientious and skilled refractonist be employed, the fee and time spent in the examination are the only losses to the patient, yet many patients who could well afford these if it were only to exclude the possible culpability of the eye, are allowed to suffer needless tortures for years because of the ignorance or thoughtlessness of the general practitioner, or sometimes his jealousy of the specialist.

As a general practitioner I have seen so much relief afforded patients by the wearing of properly-fitted glasses, and in such very unexpected ways, that I feel very keenly on this subject, and for this reason am inclined to resent anything that tends to relieve the physician of his responsibility to his patient or encourages him to undervalue the exceeding importance of eye-strain in causing disturbances anatomically remote from the eye and very various in kind. The judicious employment of the services of an expert refractonist—and competency of the highest order is a sine qua non in refraction work—will rob the practitioner of many of his chronic cases, and in place of fees he will have to be content with gratitude—if the oculist does not get all of that. Our duty, however, is none the less clear. Very truly yours,

JAMES W. WALKER, M.D.

Newspaper Reputation.

CHICAGO, March 24, 1903.

In view of the surprising and, to some of us, painful newspaper publicity that characterized the now famous visit of Professor Lorenz to this country, the following clippings from the daily papers are of interest:

"DR. MUELLER PERFORMS FOUR OPERATIONS.

Dr. Frederick Mueller, the pupil of Dr. Lorenz, performed four of the most difficult operations for congenital dislocation of the hip, in Beth Israel Hospital to-day," etc., etc.—New York Letter, the Chicago Tribune, March 15, 1903.

"LORENZ MACHINE IS USED SUCCESSFULLY.

For the first time in this country the Lorenz machine has been used in an operation for hip disease. The operation was performed by Dr. Frederick Mueller, a pupil of Dr. Lorenz," etc., etc.—New York Letter, Chicago Record-Herald, March 17, 1903.

"DR. MUELLER IS BACK. ASSOCIATE OF DR. LORENZ WILL PRACTICE ORTHOPEDIC SURGERY HERE.

TO REMAIN PERMANENTLY.

NOTED VIENNA SURGEON WILL BECOME A CITIZEN AS SOON AS LAWS PERMIT."

—Chicago Record-Herald, March 23, 1903.

And then follows a third of a column, including what purports to be an interview with Dr. Mueller, the substance of which is that he likes this country so much that he couldn't stay away; that "There is a great field here for orthopedic surgery. Chicago is centrally located, and people will flock here for treatment from all over the country."

These are but samples taken from the public press. Each of them contains what purports to be some interview with Dr. Mueller.

How long will it be before it is learned that such newspaper attentions, however profitable from a business standpoint, are not accepted by medical gentlemen in this country?

W. A. PUSEY.

Marriages.

DEYO L. RAMSDELL, M.D., Lincoln, Neb., to Miss Gertrude Musser of Orangeville, Ill., March 9.

SAMUEL CRAIG PLUMMER, M.D., Chicago, to Miss Mary Louisa Middleton, daughter of the late Dr. W. D. Middleton of Davenport, Iowa, March 18.

CARLTON LEE STARKWEATHER, M.D., Occoquan, Va., to Miss Jennie Atkinson Jones, daughter of the late Elias Jones, M.D., of Fairfax Courthouse, Va., at Trinity Church, Washington, D. C., March 12.

Deaths.

Edward Watrous Jenks, M.D., of Detroit, died suddenly, March 19, on a Wabash train between Chicago and Detroit, after an illness of five days, from pneumonia, aged 69. Accompanied by his daughter he had been taking a pleasure trip through Mexico. While visiting the Grand Canyon he took cold, and when he reached El Paso, pneumonia developed. Despite the advice of his physicians he persisted in returning to Detroit, but died on the train two hours after leaving Chicago. He was born March 31, 1833, in Victor, N. Y., and was graduated from Castleton (Vt.) Medical College in 1855; he also received a degree in medicine from Bellevue Hospital Medical College, New York, in 1864. The degree of LL.D. was conferred on him by Albion (Mich.) College in 1879. He established himself in practice in Detroit, and in 1864-65 was assistant surgeon in the military hospital, Detroit. He was one of the founders of Detroit Medical College, its president in 1868-69 and professor of obstetrics and diseases of women. From 1871 to 1875 he occupied this chair in the Medical School of Maine, Bowdoin College, and in 1879 was appointed professor of gynecology in Chicago Medical College, succeeding Dr. William H. Byford. He was a fellow of the London Obstetrical Society; one of the founders of the American Gynecological Association; a member of the American Medical Association; member and formerly president of the Michigan State Medical Society, and of the Detroit Academy of Medicine; member of the Detroit Gynecological Society; member of the Detroit Medical and Library Association, and of the Wayne County Medical Society. He was also an honorary member of the Maine Medical Association, Ohio State Medical Society, Cincinnati Obstetrical Society, and Upper Peninsula (Mich.) Medical Society. He was at one time a member of the State Board of Charities and Corrections. He was for several years surgeon-in-chief of the Michigan Central Railroad. He was one of the founders, and for four years editor of the "Detroit Review of Medicine." Dr. Jenks was one of the eminent gynecologists of his time, and made a special study of the history of gynecology. The "Detroit Free Press," in its issue of March 20, pays the following tribute to the memory of Dr. Jenks:

Michigan and Detroit have suffered a distinct loss in the death of Dr. Edward W. Jenks. In the widened relations of life, he was the old-school gentleman, courteous, considerate and charitable at all times. He carried his ideals into his professional and public life. In the sociological circles of the state Dr. Jenks will be specially missed. He had given much time to the work of correction and charities. He was a careful student of pauperism and crime. He was deeply interested in penology, and had accomplished much towards sustaining interest in the charities and corrections of the state.

To the children of Michigan Dr. Jenks was a firm, faithful and intelligent friend, and particularly was he the friend of the children of the poor and the unfortunate. Much of the energy of his later life was given to the effort to establish a home for crippled and dependent children. All his theories of organized charity and corrections were based on the belief that reform must begin with the child; that unfortunate children of all kinds should be the object of the state's tenderest solicitude; that those who could be trained into useful members of society should be so trained; that those who could not, should be isolated in such a manner that they would present the least possible menace to the physical and moral health of future generations. All this was a labor of love with Dr. Jenks, who contributed lavishly of his money, his time and his energy to the service of society, and it is not extravagant to say that the state of Michigan is far poorer by reason of his death.

Samuel W. McJunkin, M.D. Medical College of the State of South Carolina, Charleston, 1875, assistant physician at the North Texas Hospital for the Insane, and previously a medical officer in the Navy, died from erysipelas at his home in Terrell, Texas, March 8, after an illness of one week, aged 48. He was a member of the Dallas Medical and Surgical Society, which passed appropriate resolutions at a special meeting held March 9.

Peter Klein, M.D. Geneva (N. Y.) Medical College, 1846, one of the oldest physicians in Detroit; county physician in 1847 for six years; in the United States' service during the Civil War, twice city physician, and twice a representative of Wayne County in the legislature, died at his home in Detroit from paralysis, after an invalidism of five years, March 15, aged 89. He had relinquished active practice ten years before.

John G. Giles, M.D. Faculty of Medicine of Queen's University and Royal College of Physicians and Surgeons, Kingston, Ont., 1860, of Athens, Ont., died in the General Hospital, Brockville, Ont., March 12, from kidney disease, aged 69. He was a member of the Provincial Legislature in 1876.

George Washington Le Cato, M.D. University of Maryland, Baltimore, 1860, of Wachapreague, Accomac County, Va., for

many years a practitioner of New York City, and since 1893 a member of the Virginia senate, died at Richmond, Va., March 12, aged 61.

Charles A. McCall, M.D. University of Pennsylvania, Philadelphia, 1855, died from influenza at his home in West Philadelphia, after a brief illness, aged 65. He served through the Civil War and had charge of the Mount Pleasant Hospital, near Washington.

Clayton T. Hall, M.D. Medical College of Ohio, Cincinnati, 1889, died at his home in Mason, Ohio, March 11, from septicemia from an infected wound received while incising a carbuncle, aged 36. He was a member of the American Medical Association.

Samuel H. McLean, M. D. Eclectic Medical Institute, Cincinnati, 1874, superintendent of the Illinois Asylum for Feeble-Minded Children, Lincoln, Ill., died at that institution, March 18, after an illness of two years, aged 53.

Nathan Udell, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1855, for many years a practitioner of Centerville, Iowa, and twice state senator, died at the home of his son in Denver, March 6, aged 86.

Frank Fontelle Brigham, M. D. Harvard Medical School, Boston, 1885, a member of the staff of the Lynn Hospital, died from heart disease at his home in Lynn, Mass., after a brief illness, March 10, aged 40.

Alvin Jayne Cole, M.D. University of Michigan, Ann Arbor, 1860, surgeon of the Fourteenth Michigan Volunteer Infantry throughout the Civil War, died at his home in Fort Madison, Iowa, March 6, aged 65.

Albert E. Gangloff, M.D. Cleveland Homeopathic College, 1900, of Pittsburg, Pa., died from pneumonia, March 12, after a short illness, at the home of his brother in Mount Washington, Pa., aged 25.

Noyes Barstow, M.D. Vermont Medical College, Woodstock, died at his home in Springfield, Mass., March 16, from pneumonia, after an illness of five weeks, aged 82. He retired from practice in 1885.

Liberty M. Chilton, M.D. St. Louis Medical College, 1877, died at his home in Stanberry, Mo., March 9, from paralysis, after an illness of three days, aged 63. He retired from active practice in 1898.

Walter W. Bunyan, M.D. Northwestern University Medical School, Chicago, 1901, an interne at Cook County Hospital, died from pneumonia at Wesley Hospital, Chicago, March 16, aged 26.

Almer M. Collins, M.D. Medical College of Ohio, Cincinnati, 1874, clergyman, mathematician and physician, died at his home in Shelbyville, Ill., March 10, from Bright's disease, aged 58.

John G. McPherson, M.D. University of Edinburgh, Scotland, 1848, of Manistee, Mich., died in a hospital in Milwaukee, March 10, aged 77. He served as surgeon during the Civil War.

Rolla W. Selby, M.D. Rush Medical College, Chicago, 1885, of Odebolt, Iowa, died in St. Joseph's Hospital, Sioux City, Iowa, February 15, after an operation for appendicitis, aged 42.

Braxton Banks, M.D. Jefferson Medical College, Philadelphia, 1889, died from pneumonia, after an illness of two weeks, March 12, at his home in Garner, Wake County, N. C., aged 50.

T. Harper Rice, M.D., M.R.C.S. London, 1901; M.R.C.P. London, 1902, died at the home of his parents in Pottstown, Pa., March 14, from tuberculosis, after a long illness, aged 29.

De Forest Hunt, M.D. New York University, 1864, died at his home in Grand Rapids, Mich., March 10, from cancer of the stomach, after an illness of two years, aged 61.

Kinsman D. Broga, M.D., an eclectic physician of Oneida, N. Y., died at his home in that city, March 11, from angina pectoris, after a short illness, aged 73.

Chauncey M. Skinner, M.D. Rush Medical College, Chicago, 1876, of Hartland, Wis., died suddenly from heart disease at Oconomowoc, Wis., March 14, aged 65.

Albert B. McKee, M. D. Rush Medical College, Chicago, 1893, died at his home in Edwardsville, Ill., March 17, from morphin taken with suicidal intent, aged 40.

Lavoisier H. Gratigny, M.D. Starling Medical College, Columbus, Ohio, 1864, died at his home in Cincinnati, March 7, from congestion of the brain, aged 62.

Fastus A. Snear, M.D. Cincinnati College of Medicine and Surgery, 1872, died at his home in Bryan, Ohio, March 10, after a lingering illness, aged 53.

Alfred D. F. Donkle, M.D. University of Illinois, 1901, interne at Augustana Hospital, Chicago, died from empyema at Augustana Hospital March 13.

Patrick N. Kelly, M.D. McGill University, Montreal, 1884, of Wabasha, Minn., died at the home of his parents, Pine Island, Minn., March 11, aged 46.

Julian H. Jones, M.D. Hahnemann Medical College, Philadelphia, 1860, died at his home in Bradford, Vt., March 3, from Bright's disease, aged 61.

Beverly P. Morriss, M.D. University of Pennsylvania, Philadelphia, 1819, died at his home near Ebenezer Church, Amherst, Va., March 7, aged 80.

G. A. Rebman, M.D. University of Maryland, Baltimore, 1875, died at his home in Wrightsville, Pa., March 9, from consumption, aged 50.

Sherburne R. Merrill, M.D. Jefferson Medical College, Philadelphia, 1851, died at his home in Paterson, N. J., March 16, aged 81.

Norman H. Getman, M.D. Homeopathic Hospital College, Cleveland, 1854, died recently at his home in Richfield Springs, N. Y.

John Oscar Lewright, M.D. Missouri Medical College, St. Louis, 1887, died recently at his home in St. Louis, aged 36.

William Hunter, M.D. Homeopathic Hospital College, Cleveland, 1864, died at his home in Blairsville, Pa., March 13.

Levi C. Hubbard, M.D. Albany Medical College, 1882, died recently at his home in Carthage, N. Y., aged 66.

Deaths Abroad.

Manuel Barros Borgono, M.D., the eminent Chilean surgeon and rector of the University of Santiago, Chile, died recently in that city.

Mateo Gonzalez, M.D., dean of the medical profession of Morelia, state of Michoacan, Mexico, and for many years director of the school of medicine in that city, died March 5, after a protracted illness.

M. Crisafulli, M.D., who graduated at Messina and after several years of study in Paris and London at the expense of the municipality of Messina, returned to be professor of medicine, died there, February 19, after a brief illness, aged 77.

Dr. Ferdinand Weyert, senior physician and chief of the directorate of the St. Petersburg Eye Institute, an eminent ophthalmologist, died at his home in St. Petersburg, February 3, after a brief illness, aged 66. He was graduated from the University of Dorpat, pursued post-graduate studies in Vienna, Paris and Berlin, where he was a student of Albrecht v. Graefe, and on his return to St. Petersburg became connected with the Eye Institute, of which he was an honored official for more than forty years.

Dr. Adolf Gessner, professor and director of the Frauenklinik at Erlangen, died recently, aged 39. In 1890 he was assistant to Prof. Dr. Frommel, from 1893 to 1897 was assistant physician in Olshausen's clinic, and then established himself in Erlangen, where he again became assistant and associate professor. In 1901 he was made director of the gynecologic clinic and professor of obstetrics. He was a thorough student, a clear and entertaining teacher, and a worthy and lovable man of great promise. He wrote the section on sarcoma of the uterus in Veit's Lehrbuch, and also was the author of a well-written and well-known treatise on sepsis and antisepsis in obstetrics.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

TREATMENT OF POISONING BY FORMALIN.

BILLINGS, MONT., March 17, 1903.

To the Editor:—Will you please inform me what is the best antidote for formalin? The reason I ask is I had a case of a little boy a few days ago that drank about one ounce. CLIFF LINDSEY.

Ans.—Acetate of ammonia is reported beneficial, as well as dilute ammonia water cautiously administered. Beyond this follow the treatment of acute alcoholic poisoning; if necessary, maintain the body temperature with external heat, the respiration by atropin, the heart by strychnin. Of course, remove all the drug remaining in the stomach. If the vapor of formaldehyd has been inhaled, cautious inhalation of ammonia is recommended by authorities, as it destroys the formaldehyd.

Miscellany.

Clippings from Lay Exchanges.

NO CONSPIRACY ALLOED.

"Dr. B——, of Atlantic City, is about to locate at Wycombe for the practice of his profession. The doctor has secured rooms in the home of Mrs. G—— P—— and will put up his shingle the beginning of next week. An undertaker located in Wycombe a week or so ago."—*Jenkintown (Pa.) Spirit*.

THE NEW SYMPTOM—CONSCIOUS DELIRIUM.

Under the heading: "Delirious All Evening. Members of Family were at Bedside, but He Did Not Know Them," the *Johnstown (Pa.) Democrat* says: "He was conscious to the end, but was delirious the greater part of the evening."

COLLES FRACTURE OF THE SHOULDER.

"An x-ray examination of the injured shoulder of W—— K——, the ball player, . . . reveals the fact that he is suffering from what is known to the medical profession as a Colles fracture."—*Norwich (Conn.) Bulletin*.

DEATH WAS NOT SURPRISING.

Under the headlines "Doctor Not Surprised at ———'s Death," the *Boston Morning Journal* contains these lines: "The cause of death was found to be calcification of the althe remotus tissue, just above the aortic valve."

SLICK'S FEMALE HYDRO-EMETICS.

"Dr. ——— Slick of ——— has moved to ——— to practice female therapeutics, metaphysics and hydro-emetics. Dr. Slick ought to be finer than silk."—*Adrian (Mich.) Press*.

POSTMORTEM TO BE POSTMORTEM.

"The medical fraternity . . . have obtained the consent of the young woman and her parents to hold a postmortem after her death."—*Bowling Green (Ohio) Sentinel*.

THE NEW DISEASE—LAPEROTOMY.

"The patient was suffering with laperotomy and after an examination last night an immediate operation was found to be necessary."—*Muscatine (Iowa) Journal*.

Medical Courts of Honor in Prussia.—Prussia has long had a professional court of honor for the army and for law, and in 1901 a similar tribunal was established for the medical profession in every district where there is a medical organization. The court consists of the president and three members of the local organization and a judge of a local court. There is a central supreme court of appeals, consisting of the director of the Prussian ministerial medical department, four members of the central committee of the "Aerzteammer," and two physicians appointed by the crown. The penalties which the court can impose are warning, reprimand, a fine not exceeding 3,000 marks (about \$750) and the temporary or permanent withdrawal of the right to membership in the local medical organization. The "Allg. Med. Ct.-Ztg." has recently been publishing the decisions of the supreme court. Its findings do not always meet with the approbation of the profession as a whole. In a recent decision, for instance, it condemned the efforts of a physician who was endeavoring to secure the introduction of the free choice of a medical attendant by the members of the sick benefit societies. This is considered by the profession a much-needed reform and is generally known as "the American plan." Among the decisions is one that imposed a fine of \$50 and costs on a physician who had associated himself with a notorious magnetic healer, confirming the decree of the local court of honor. Another imposed a fine of \$25 on a physician who had applied to an insurance company for a position, threatening that he would induce certain families to withdraw from the society unless he were appointed to a position in it. In one decision the supreme court reversed the action of the lower court, which had imposed a fine of \$75 on a physician because he had opposed the organization of a children's ward in the city hospital, on the ground that the existing medical staff would be inadequate for the enlarged responsibilities and the

children would receive merely secondary consideration. He urged the establishment of a separate children's hospital. The charge against him was dismissed. Another physician was also acquitted who had been fined by his local court of honor. He had been called to a child with the measles, but was dismissed by the father in a few days, before the disease had terminated. He sent in his bill for his services eleven days later, and the local court of honor reprimanded and fined him. One decree states that a physician who deviates from the customs of his colleagues is not unethical so long as the deviation is not derogatory to the honor of the profession. The court of honor expressly states that its power is not limited to contemporaneous occurrences, but that all unethical acts by any living Prussian physician, since his "approbation," come within its jurisdiction. It therefore imposed a fine of \$25 on a physician who had forced his professional services on a certain patient previous to the organization of the professional court. Another decision condemned as unethical "control" visits under instructions from a third party without the knowledge of the attending physician, and also derogatory remarks in regard to the professional services of any other physician in the presence of the patient. Seventeen decisions have been handed down since last May, but most of them relate to merely technical legal points.

Book Notices.

VON DER NERVENZELLE UND DER ZELLE IM ALLGEMEINEN. Von Paul Kronthal. Mit 6 chromolithographischen, 3 heliographischen Tafeln und 27 Figuren im Text. Pp. 274. Jena: G. Fischer. 1902.

When this book of nearly 300 pages, dealing with one of the most absorbing topics of the period and illustrated liberally with heliographic and chromolithographic plates, came to us we hoped much from it and, on opening it, began its perusal with a certain degree of eagerness. An appetite already keen was further whetted by a caviar which the author provides, an introductory essay on methods, in which the theories of tissue-fixation and staining are discussed. The writer's apparent familiarity with some of the more recent theories of the structure of protoplasm, including that which looks on it as essentially a colloidal solution, his acquaintance with the fundamental researches of A. Fischer concerning the effects of the fixation-agents in common employ, his references to Gierke's views on the chemistry of staining processes and to O. N. Witts' hypothesis concerning the relation of the staining to the formation of so-called "solid solutions"—all gave us the impression that our author approached his problem armed with the most modern weapons for histologic attack. There seemed every reason to believe that in a research so auspiciously undertaken, leading to results requiring nearly 300 pages for their record, and published at great cost, something of more than ordinary interest would be found. A further study of the book, however, brings disappointment.

An examination of Kronthal's monograph shows it to be divided into two parts: (1) On the biology of the nerve-cell, and (2) on the cell in general and the nerve-cell in particular. The former part includes the introductory essay on methods, a description of the figures in his plates, a review of his personal observations and the conclusions drawn from them. The latter part assumes more the nature of a philosophic treatise.

The title given to Part I is "The Biology of the Nerve Cell." It consists of four chapters: 1. On Methods (referred to above). 2. Description of Figures. 3. Résumé of Personal Observations. 4. Inferences Drawn from Observations. In the chapter describing the figures the author gives only a series of legends for the various figures in the colored plates. The description of the first figure is fundamental, for on this a large part of the author's other work and his inferences are based. The figure purports to be a small blood vessel from the anterior horn of a rabbit five days old, under a magnification of 500. Besides the red blood corpuscles within the lumen of the vessel there is a mononuclear cell, filling the whole lumen at its level. This cell is designated a leucocyte, though it is certainly not a polymorphonuclear leucocyte, nor a lymphocyte,

nor does it resemble any large mononuclear element one ever sees in the blood. It looks more like an endothelial cell than like a leucocyte, though it is very difficult to say from the drawing what the author has seen. Outside the vessel are two nuclei without visible protoplasm. What these were drawn from is doubtful, though it seems probable that the artist really had glia cells before him. The author calls them "two bodies just like leucocytes in their internal structure and staining behavior" (*Zwei in ihrem innerem Bau und tinctoriellen Verhalten den Leukoeyten ganz gleiche Koerper*). As a matter of fact, they do not look at all like his suppositious leucocyte in the adjacent blood-vessel; much less do they resemble the real leucocytes one sees in the blood. The description of this first figure is followed by those of forty other figures in the colored plates and of seven photograms.

In chapter 3, in which Kronthal gives a résumé of his observations, he states that he finds everywhere in the central nervous system, in both white and gray substances, small cells which, in their form and behavior towards staining reagents, agree with leucocytes. They are usually irregularly distributed, but are often in rows. Often no protoplasm is to be seen about them. Fusions of two or more such nuclei are often met with. Various transition stages to the large cells of the anterior horns are described. Especial stress is laid on the occasional presence of a small cell inside the protoplasm of a large cell. The author states that an examination of the good illustrations in archives and monographs reveals "the lymph cells here described in the central nervous system, their relations to one another, to the similar but larger cells, as well as to the large cells in the gray matter" entirely correctly and sharply depicted. Anatomists call the smaller cells "free nuclei" (*freie Kerne*); pathologists and psychiatrists regard the relation of the smaller cells to the larger cells as evidence of degeneration. If they had used his alcohol-glacial-acetic-fixation method, Kronthal thinks they would have seen something entirely different in these structures.

In chapter 4, Kronthal gives his own ideas as to the interpretation of the observations. He decides that he finds leucocytes all through the normal central nervous system. A great many lymphoid cells come into the nervous system from the cerebrospinal fluid. All these "leucocytes," once inside, find themselves in a totally different environment from that to which they have been accustomed. The "nomadic" cell is compelled to "settle down." Again, the wandering cell here meets with chemical substances unknown to it—cerebrin, lecithin, protagon, neurokeratin, keratin, xanthin, hypoxanthin and inosit. As a result the leucocytes lose the properties they had in the blood and take on other characters. They fuse with one another and make larger cells. Gradually the large "cells" of the gray matter are built up out of them. A nerve cell never divides, not even in the embryo. But nerve cells are present throughout life, though they are constantly degenerating. "How then," asks the author, "is the nerve-cell supply maintained?" And his answer is "in the same way that it arose originally, viz., by slightly differentiated cells coming into connection with fibers and so becoming nerve cells." Kronthal believes, then, that nerve cells differ from all other cells and that their nuclei are different from all other nuclei, for the nuclei have not arisen by mitosis, but are the result of fusion of nuclear substances of other cells. The reason there are more leucocytes in the gray matter than in the white matter is that the nerve fibers are medullated and packed together like cables in the white matter, while in the gray matter the fibers are naked; the leucocytes easily wend their way through the relatively thick cables, but are caught and held fast when they reach the extremely fine fibers of the gray matter. The nerve cells are continuously dying and continuously arising anew through the fusion of leucocytes.

The first part of the book contains all the author's observations and the inferences drawn therefrom and occupies forty pages of the volume; the second part, in which he writes a philosophical treatise on "the cell in general and the nerve cell in particular" based on the theory just outlined of the origin of nerve cells from leucocytes, occupies two hundred and twenty-two pages. It seems to the reviewer not worth the while of

American readers to be burdened with even an epitome of this part, though it has been conscientiously waded through. Kronthal introduces in the various chapters the majority of the complex names that have been given to the different parts of the protoplasm and nucleus, and most of the theories that have gradually, at one time or another, been developed in cytology; he cites references from more than 200 writers, and tries to weave all into connection with the "nerve cells derived from fused leucocytes"; he coins, unnecessarily, a certain number of new names, which add to a nomenclature already overburdened.

Kronthal's reading seems to have been encyclopedic, but he appears to be devoid of sound judgment and the power of legitimate interpretation. How his book could have secured a publisher at all, much less the imprint of the celebrated house of Gustav Fischer of Jena, is difficult for American neurologists to understand. America has more than its share of worthless publications; but a few more such volumes from Germany and she will be overruled. If anyone thinks the verdict here pronounced unwarranted, let him but turn to chapter xiv of the second part of the book and read Kronthal's discussion of the origin of tumors, where he develops the view that tumors arise as a result of a fertilization process, the cell of one human being, perhaps an epithelial cell or a leucocyte, entering another human being and fertilizing some cell of the host; or let him read the last two pages in the book, of which the following is a translation of the first paragraph: "The bioids in the cell are alive, the trophomigma is dead. But the bioids can not live without the trophomigma. Hence, the 'living' is the whole cell. But this again can not live, if its trophomigma is not regularly supplemented, its nutrition maintained. Hence the 'living' is the cell with its nourishment. Nourishment for the cell consists of all kinds of substances, which, for the most part, constitute the earth. So the 'living' is the whole earth, and, since this, according to the Kant-Laplace hypothesis, is a product of the same forces as is every body in space and can not exist . . . without the other bodies, so the 'living' is the whole universe. Nature is the 'living,' not this or that body." To such levels may one soar, riding on the back of a supposititious leucocyte in a spinal capillary!

TOXICOLOGY. The Nature, Effects and Detection of Poisons, with the Diagnosis and Treatment of Poisoning. By Cassius M. Riley, M.D., Professor of Chemistry and Toxicology in Barnes Medical College. Cloth. Pp. 132 Price, \$1.50. St. Louis: Lewis S. Matthews & Co.

This little work is a second edition, though not so stated on the title page. It is a convenient, handy manual of the principal facts in regard to poisons and their antidotes. It is neatly gotten up and seems, in the main, to cover its subject very satisfactorily. An addition which will probably be appreciated is the series of good illustrations of some of the more important poisonous plants. One or two inaccuracies are noticed, such, for example, as the description of the poisonous serpents which is not reliable, since it only describes the viperine type. This, however, is the only type represented in this country that is really dangerous; the coral snake, which is mentioned as being comparatively rare and not vicious and hardly considered poisonous. The statement that chloroform is the principal anesthetic used in this country strikes us as incorrect. We had supposed that ether was used more at the present time for general anesthesia.

WHERE AND HOW TO AMPUTATE. By Lowell E. Jepson, M.S. Paper. Pp. 13. Minneapolis: Jepson Bros.

One of the most important things to consider in making an amputation is where and how this shall be done so that the patient can with the most comfort and satisfaction wear an artificial limb. This booklet concisely states the principal points to be considered and this information will be of practical help.

FARMACOTERAPIA CON FORMULARIO. Dr. Prassitele Piccinini. Un volume di pag. viii-362, elegantemente legato in tela. Ulrico Hoepli. Milano. (L. 3,50.)

This is one of the neat and convenient little Hoepli pocket handbooks which will be of use to those who understand Italian and almost anyone can pick up enough of that language to utilize it in a short time. The numerous formulas are easily transposed to accord with the United States pharmacopeia.

State Boards of Registration.

Missouri Examination Dates.—The regular spring examination of candidates for the practice of medicine in Missouri will be held at the University Medical College, Kansas City, Mo., April 1 to 3 instead of April 3 to 5, which was the date previously set. At St. Louis examination will be made April 13 to 15.

Confederation Meeting.—The National Confederation of State Medical Examining and Licensing Boards will hold its next meeting at New Orleans, May 4, and urges every unaffiliated state or territorial board, whose duty it is to examine or license physicians intending to practice, to affiliate with the confederation. The secretary is Dr. A. Walter Suiter, Herkimer, N. Y. An invitation is extended to physicians and educators who are interested in the cause of higher medical education to attend.

Association News.

THE NEW ORLEANS NUMBER.

A REQUEST FOR INFORMATION CONCERNING TRAINS, EXCURSIONS, ETC.

The issue of *THE JOURNAL* of April 11 will be the New Orleans Number, and will contain the preliminary programs of each of the sections and an illustrated article descriptive of New Orleans. There will also be given railroad rates and a list of special trains, etc. All information concerning such matters should be sent us in time for publication in that issue. Special excursions have been arranged from New York, Chicago, Omaha and other points. We desire full particulars of all such trains. It is hoped that announcements may be made of the water-route excursions, one by the Mississippi River and one by the Atlantic Ocean. Any one desiring to have information on any particular point given in the New Orleans Number should write to *THE JOURNAL* making the request.

Stereopticon for Section on Ophthalmology.

The officers of the Section on Ophthalmology announce that Mr. Earl J. Brown has offered his services and the use of the Geneva Optical Co.'s stereopticon, with or without microscopic adjustment, for the use of such members of the Section on Ophthalmology as desire to have their papers illustrated thereby.

ACCOMMODATIONS AT NEW ORLEANS.

IMPORTANT ANNOUNCEMENT FROM THE HOTEL COMMITTEE.

We are in receipt of a letter from Dr. E. D. Martin, 810 Common street, New Orleans, chairman of the Hotel Committee, asking us to publish a notice and urge on those who expect to attend the New Orleans meeting the importance of writing him at once regarding reservation of rooms. This is of special interest to those who will be accompanied by ladies. He states that New Orleans is amply able to give comfortable accommodations to all at reasonable rates, although the space in some of the hotels will be taken up early. Those having the responsibility of this matter in New Orleans desire to emphasize the necessity of early action so that all may be accommodated, and that without any complications, on arrival.

Dr. Martin closes by saying: "The Information Bureau has a list of houses that we have visited and inspected and can vouch for, of over three thousand rooms, and there is no alarm necessary, as every one will be cared for at reasonable prices."

The New Orleans illustrated number of *THE JOURNAL* will be issued April 11, giving a full description of New Orleans and its accommodations.

NATIONAL BUREAU OF MEDICINES AND FOODS.

The President of the American Medical Association has appointed the following as a committee to represent the Association to investigate the proposed National Bureau of Medicines and Foods, this committee to report at the New Orleans meeting: Dr. E. Eliot Harris, New York; Dr. Solomon Solis-Cohen, Pennsylvania; Dr. H. Bert Ellis, California; Dr. N. S. Davis, Jr., Illinois; Dr. Philip Mills Jones, California.

Societies.

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, FIFTY-FOURTH ANNUAL MEETING, NEW ORLEANS, MAY 5-8.

New Mexico Medical Society, E. Las Vegas, April 7.
 Florida Medical Association, St. Augustine, April 8.
 Western Ophthalmological and Oto-Laryngological Association, Indianapolis, April 9-11.
 Tennessee State Medical Society, Nashville, April 14-16.
 Medical Association of Georgia, Columbus, April 15.
 South Carolina Medical Association, Sumter, April 15-16.
 Iowa State Medical Society, Sioux City, April 15-17.
 Medical Association of the State of Alabama, Talladega, April 21.
 Medical Society of the State of California, Santa Barbara, April 21.
 Mississippi State Medical Association, Greenville, April 21-23.
 Medical Association of the State of Missouri, Excelsior Springs, April 21-23.
 Kentucky State Medical Society, Louisville, April 22-24, 1903.
 Texas State Medical Association, San Antonio, April 28.
 Louisiana State Medical Society, New Orleans, April 28-30.
 Medical and Chirurgical Faculty of Maryland, Baltimore, April 28-30.
 Nebraska State Medical Society, Lincoln, April 28-30.
 Illinois State Medical Society, Chicago, April 29-May 2.
 Arkansas Medical Society, Jonesboro, April 30-May 2.

Kentucky State Medical Association.—The forty-eighth annual meeting will be held in Scottish Rite Temple, Louisville, April 22, 23 and 24.

Polk County (Iowa) Medical Society.—At its March 3 meeting this society decided so to change its by-laws as to admit any non-sectarian practitioner of medicine.

Medical Woman's Club of Chicago.—This club was recently organized, with Dr. Sarah Hackett Stevenson as president, and Dr. Henrietta Johnston, secretary and treasurer.

Sangamon County (Ill.) Medical Society.—At its monthly meeting, March 9, the constitution and by-laws of the society were amended to conform to those of the Illinois State Medical Society.

Hamilton County (Neb.) Medical Society.—The physicians of Hamilton County recently met at Aurora and organized a county society, with Dr. Edmund A. Steenburg president and Dr. Isaiah W. Haughey secretary, both of Aurora.

Louisville Practitioners' Club.—The annual meeting and banquet was held March 10. Dr. Oscar E. Bloch was elected president; Dr. Hugh N. Leavell, vice-president; Dr. John J. Moren, secretary and treasurer, and Dr. John K. Freeman, historian.

Vernon Parish (La.) Medical Society.—This society was organized at Leesville, March 4, with Dr. Mark R. McAlpin, Leesville, president; Dr. C. C. Self, Hornbeck, vice-president; Dr. F. W. Dortch, Barham, secretary, and Dr. J. H. Word, Leesville, treasurer.

Holt County (Neb.) Medical Society.—The physicians of Holt County recently met at Atkinson and organized a county society, with Dr. Joseph L. McDonald, president; Dr. B. T. Trueblood, O'Neill, vice-president, and Dr. P. J. Flynn, O'Neill, secretary and treasurer.

Steele County (Minn.) Medical Society.—At the annual meeting, March 10, the following officers were elected: President, Dr. George Shulze; vice-president, Dr. John H. Adair; secretary, Dr. Allan B. Stewart, and treasurer, Dr. Warren C. Eustis, all of Owatonna.

Johnson County (Texas) Medical Society.—At the March 13 meeting, at Cleburne, the following officers were elected: President, Dr. W. P. Alexander, Cleburne; vice-presidents, Drs. Larkin L. Harris, Cuba, and R. H. Roark, Cleburne, and secretary, Dr. John M. Huddleston, Cleburne.

Philadelphia Society of Tropical Medicine.—This society, whose object is the study of tropical diseases, has been formed, with the following officers: President, Dr. Thomas H. Fenton; vice-presidents, Drs. James C. Wilson and James M. Anders; secretary, Dr. Joseph McFarland; treasurer, Dr. Edward B. Gleason, and executive committee, Drs. John V. Shoemaker, James Fenton, Judson Daland, Roland G. Curtin, Orville Horwitz and Hobart A. Hare.

Mercer County (Ohio) Medical Society.—On March 10, with the assistance of Dr. Horace Bonner of Dayton, Ohio, councillor for that district, the Mercer County Medical Society was re-organized at Celina, Ohio, in affiliation with the Ohio State Medical Association. These officers were elected: Dr. D. J. C. Wintermute, Celina, president; Dr. C. F. Bohnan, Coldwater,

vice-president; Dr. D. Herbert, Richardson, Celina, secretary; Dr. J. E. Hattery, Celina, treasurer, and Drs. Joseph Sager and Stephen R. Wilson, Celina, and Philip F. Weamer, Coldwater, censors.

Erie County (N. Y.) Medical Association.—At the annual meeting, March 9, the resolutions prepared by Drs. Julius Ullman, De Lancey Rochester and Charles S. Jewett, the committee of public health, were unanimously adopted. They state that, because of an epidemic of typhoid fever at West Seneca, and because the drainage therefrom into Lake Erie is close to the intake of the water supply of Buffalo, that Buffalo's water supply is now a menace to the public health and that the authorities of West Seneca, Buffalo and New York state should take immediate action. Officers for the ensuing year were elected, as follows: President, Dr. Allen A. Jones; vice-president, Dr. Carlton C. Frederick; secretary, Dr. Jacob S. Otto; treasurer, Dr. William I. T. Lornton, and member of executive committee, Dr. Joseph W. Grosvenor.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, Dec. 15, 1902.

The President, Alexander Lambert, M.D., in the Chair.

The Rational Treatment of Tetanus.

DR. WILLIAM H. LUCKETT made a brief report covering his experience in three cases successfully treated by intraspinal injections of tetanus antitoxin. One case received eight injections of from 3 to 15 c.c., or a total of 92 c.c., 159 minims of cerebrospinal fluid being withdrawn. Another case received five injections, a total of 59 c.c., and 532 minims of cerebrospinal fluid were withdrawn.

Modern Treatment of Urethral Stricture—Dilatation.

DR. J. W. S. GOULEY opened the symposium on the modern treatment of urethral strictures with a paper on their treatment by dilatation, laying down the following propositions: 1, Strictures at the meatus, being ordinarily dense, require incision; 2, strictures in the scrotal region which are narrow, indurated, resilient and refractory to treatment require internal incision; 3, strictures which render catheterism difficult or dangerous ordinarily require internal incision if in the scrotal region, and external incision if in the perineal region; 4, strictures in the perineal region which are narrow and complicated with fistulae, and accompanied by masses, require external incision; 5, strictures in the perineal region complicated by abscess or extravasation of urine require immediate external incision; 6, traumatic strictures in the perineal region require early external incision, and 7, other urethral strictures are generally amenable to dilatation, or, at least, divulsion. In the early stages of strictures due to urethritis a permanent cure could be effected in a few months by simple dilatation, but in the long-standing ones months or even years of dilatation would be required. Continuous dilatation or the retention of an instrument for a few hours or even for one or two days, was indicated in narrow strictures, which failed to yield to ordinary dilatation or were complicated by retention of urine. Rapid dilatation, or the increase of the caliber of the urethra by three or four numbers at a sitting, was indicated in narrow strictures which threatened to produce retention of urine.

Urethrotomy.

"Internal Urethrotomy" was discussed by DR. L. W. HOTCHKISS, and "External Perineal Urethrotomy" by DR. PARKER SYMS. These two papers were given in abstract in THE JOURNAL, February 28, p. 608, ¶78 and ¶79.

Discussion.

DR. JOSEPH D. BRYANT said he had always been averse to very free division of the meatus urinarius. Continuous dilatation was a useful method, if proper judgment were exercised as to the length of time it is to be kept up.

DR. JOHN F. ERDMANN spoke in favor of the Oberlander and Kollmann dilating instruments, and recommended dilating to the extent of from 2 to 4 mm. at each sitting, the treatment being repeated at intervals of four or five days. The continuous method was, no doubt, a useful one, but in many

of the cases in which it had seemed to be indicated he had succeeded by giving the patient a warm bath for fifteen to thirty minutes. In performing external urethrotomy without a guide he preferred to do the operation as advised by Dr. Bolton. In this method, the patient is placed in the reversed Trendelenburg posture, and an incision is made from one tuberosity of the ischium to the other in the form of an arc. This gives ready access to the apex of the prostate and, when this is found, puncture is made and then a dissection is made towards the membranous portion of the urethra. So far, this method had been invariably successful.

Dr. E. L. KEYES, Jr., said that it was certainly desirable to have a large incision, but the one recommended by the last speaker appeared to him to be an unnecessarily free dissection. If the dissection were carried down to the face of the stricture it would be comparatively easy to find the opening of the latter.

Dr. FERD C. VALENTINE expressed himself as strongly in favor of the treatment of urethral strictures by dilatation, as opposed to operative measures, and condemned the too common plan of leaving this dilatation treatment to the patient himself.

Dr. WILLIAM A. SHUFELT spoke in favor of an early resort to perineal section rather than indulging in much experimentation.

Dr. ROBERT NEWMAN said that up to seven years ago he had successfully treated by electrolysis over 2,000 strictures of the urethra, and that number was now increased by probably 400 or 500. Relapses never took place, a statement regarding the permanency of the cure effected by this method of treatment which could be substantiated by patients in this city who had remained well for long periods of time—even as long as 26 years. This treatment by electrolysis of urethral strictures had been the subject of an investigation by a committee of his peers appointed by the American Electrotherapeutic Association in 1892. This committee, after long and careful investigation, reported that Dr. Newman's conclusions appeared to be well sustained by the statistics placed at its disposal, and that the experience of the committee also tended to confirm the value of the continuous current in resolving a large class of urethral strictures. The trouble with internal urethrotomy was that it would not restore the caliber of the urethra if the incisions healed by first intention, and if these incisions were kept apart and were made to fill up by granulation, a cicatrix would be formed, which would make the last state worse than the first. It was worthy of note that many authorities had in recent years declared themselves as opposed to internal urethrotomy.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Symposium on Colic.—I. In Infants.

Dr. Robert Hutchison, in *The Clin. Jour.*, states that the chief symptom of infantile colic is pain, expressed by crying. However, the cries of the infant should cause one to consider the possibility of earache, teething, renal colic (which is as frequent as in older people), phimosis causing straining on passing water and tenderness of the bones resulting from rickets, congenital specific disease, also mental deficiency causes the infant to cry without apparent cause. The signs of colic are: hardness of the abdomen, palpation of little coils of intestine, the tendency of the infant to draw up the legs, and perhaps convulsions. The passage of flatus with cessation of crying is a splendid sign of the proper diagnosis.

The first thing in the treatment is to apply warmth to the abdomen. This can be done by friction with warm oil, by warm fomentations or by poultices of linseed or mustard, and if necessary by the mustard bath. Warmth may be employed internally by means of enemas of hot water, injecting two or

three ounces of water as hot as can be borne. Carminatives by the mouth, according to the author, aid in the expulsion of flatus, as peppermint water or dill water or small doses (ten drops) of sweet spirits of niter.

CORRECTION OF FEEDING AND OF CONSTIPATION.

If the infant is breast-fed inquiry may show that it is being fed irregularly and too frequently. Constipation must also be corrected. Massage to the abdomen is indicated in such cases following the course of the colon, applying it morning and evening for five or ten minutes. As to the medicines to be administered, they should consist of such preparations as have a tonic action on the bowel such as aloes combined with a little nux vomica as follows:

R. Tinct. aloes.....	gtt. iii-v	20-30
Tinct. nucis vom.	gtt. ss	03
Tinct. belladonnae	gtt. ii	12
Syr. sennae	gtt. xx	1 30
Inf. gent. co. q. s. ad.....	3i	4

M. Sig.: To be taken at one dose night and morning or in severe cases once in six hours.

The foregoing should be varied according to the age, remembering that children bear belladonna very well and strychnia badly. In case children should object to this mixture or are unable to retain it on the stomach the following may be given:

R. Confectionis sulphuris	3ss	15
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Sig.: One half teaspoonful at night or morning and night.

This is very agreeable for infants to take, but not so effective as the first combination.

In bottle-fed infants the frequent cause of colic is lack of cleanliness. The feedings are also given irregularly, and the food probably indigestible, owing to excess of casein products. In any case carminatives frequently give relief when given between meals. It should be alkaline on account of the extreme acidity present in the stomach and should be pleasant to take. The following combination serves the purpose:

R. Sodii bicarb.	gr. iiss	15
Spts. ammon. arom.	m. iiss	15
Glycerini	m. ii	12
Aq. menth. pip. q. s. ad.....	3i	4

M. Sig.: At one dose, to be given between the feedings.

In all such cases the abdomen must be kept warm. Binders should be used, if necessary, and the feet should be well protected.

If the child is gaining weight, even though there are attacks of colic, no great alteration in the food should be made. Some preparation of opium may be administered as follows:

R. Codeina	gr. 1/40 to 1/30	0015-0020
Glycerini	m. ii	03
Aq. menth. pip. q. s. ad.....	3i	4

M. Sig.: At one dose to relieve the colic.

If acute vomiting is present the infant should be starved for two, three or more days, if necessary. During this period water (boiled) must be given in abundance.

VOMITING.

Lavage is of great service in cases of acute or chronic vomiting. It is not so unpleasant as in adults, and is simple and harmless. If the eyelet of the tube becomes clogged with clots of casein they may be dislodged by blowing into the top of the funnel. If the contents of the stomach are sour sodium bicarbonate should be added to the water in proportion of one teaspoonful to the pint.

Calomel is one of the best medicinal preparations, given in doses of one-tenth grain (.006) to one-sixth grain (.01) every hour for six or seven doses. This may be followed by bismuth subnitrate or the carbonate in ten-grain (.6) doses.

In chronic vomiting the feedings should be diluted and regulated and the stomach washed out before resorting to drugs. Bismuth is the best, given in large doses. In other cases two or three minims of dilute hydrochloric acid is of service, combined as follows:

R. Acidi hydrochlor. dil.	m. ii-iii	12-20
Glycerini	m. ii	12
Aq. menth. veridis q. s. ad.....	3i	4

M. Sig.: At one dose.

ACID FERMENTATION.

When the contents of the intestine are undergoing acid fermentation causing colic, the following antacid aperient has been recommended:

R. Pulv. rhei comp.	3i	4
Spts. ammoniæ fœtidi	3ss	2
Tinct. card. comp.	3iii	12
Spts. chloroformi	3ss	2
Aquæ carui q. s. ad.....	3iiss	45

M. Ft. mistura. Sig.: One or two teaspoonfuls, according to the age of the child, every hour until relieved.

Yeo recommends the following as a clyster when there is difficulty in getting the child to take medicine by the mouth:

R. Olei ricini	3i-3iii	4-12
Olei rutæ	mii-vi	12-35
Potassii carb.	gr. v-xv	30-1.00
Aquæ q. s. ad.....	3ii-iv	60-120

M. As a high enema. If, after free evacuation of the bowels, there is still pain and distress the following may be given as an enema:

R. Tinct. opii	m. i-ii	100-12
Emuls. amyli	3i-3ii	30-60

M. Sig.: As an enema in case the child is over six months of age; or:

R. Tinct. cascariellæ		
Tinct. krameriæ, āā.....	m. x	65
Olei anthemidis	m. i-ii	100-12
Syr. simplicis	3iiss	10
Aq. q. s. ad.....	3ii	60

M. Sig.: One teaspoonful every two hours by the mouth.

II. Colic in Adults.

Yeo, in his *Clin. Ther.*, recommends, in the treatment of colic in adults, the administration of one to two pints of warm soapsuds, containing one or two tablespoonfuls of castor oil and in flatulent distention a tablespoonful of spirits of turpentine. Locally, he recommends hot flannels or a linseed poultice sprinkled with laudanum applied to the abdomen. The surface of the abdomen may be rubbed with opium or belladonna liniment, employing massage at the same time. If the trouble be confined to the small intestine a mild cathartic such as castor oil or calomel should be given by the mouth. In severe cases a hypodermic of morphin may be given. Atropin relieves intestinal spasm by relieving the irritability of the intestinal nerves and does not have so ill an effect on the intestinal nerves as has opium. The following combination is recommended by the author:

R. Tinct. belladonnæ	3ss	2
Tinct. card. comp.		
Spts. ammon. arom.		
Spts. chloroformi, āā.....	3ii	8
Sodii bicarb.	3i	4
Aquæ fœniculi q. s. ad.....	3vi	180

M. Ft. mistura. Sig.: Two tablespoonfuls every hour until relieved.

In gouty individuals accompanied by constipation warm alkaline medicines are recommended:

R. Ammon. carb.	gr. xl	2/65
Sodii bicarb.	gr. lxxx	5
Spts. chloroformi	3iii	12
Tinct. zingiberis	3i	4
Aquæ cinnamomi q. s. ad.....	3viii	240

M. Ft. mistura. Sig.: Two tablespoonfuls combined with one of hot water every three or four hours.

As a pill to be taken at bedtime in these gouty cases, the following:

R. Ext. colchici	gr. ss	103
Pil. rhei comp.	gr. iv	25

M. Ft. pilula No. i. Sig.: One such to be taken every night.

FLATULENCE.

The following combination is of service in checking decomposition:

R. Ext. nucis vom.	gr. iss	109
Argenti nitratis	gr. ii	12
Ext. lupuli	gr. xii	75

M. Ft. pil. No. vi. Sig.: One pill three times a day; or:

R. Mag. carb.	3i	4
Pulv. rhei	3ss	2
Tinct. rhei	3iii	12
Tinct. opii	m. xv	1
Spts. anisi	m. vi	35
Spts. menth. pip.	3ii	8
Aq. destil.	3vi	180

M. Sig.: Shake. One tablespoonful three times a day; or:

R. Spts. chloroformi		
Tinct. cardamom. co., āā.....	3i	30

M. Sig.: One teaspoonful in water every half hour; or:

R. Olei cajuputi	m. iv	25
Sacch. albi	gr. x	65
Tinct. jalapæ	3i	4
Decoct. aloes comp. q. s. ad.....	3iiss	45

M. Sig.: At one dose; or:

R. Spts. chloroformi	3i	4
Morph. acetatis	gr. iss	09
Olei anisi	m. viii	50
Olei menth. pip.	m. viii	50
Syr. acaciæ	3ii	8
Aq. camphoræ q. s. ad.....	3ii	60

M. Sig.: One teaspoonful at a dose and repeat in an hour if necessary.

The *Ther. Gazette* recommends the following to relieve the flatulent colic in women:

R. Spts. ammon. arom.	3iiss	6
Tinct. belladonnæ	3ss	2
Tinct. zingiberis	3i	4
Spts. chloroformi	3i	4
Aq. menth. viridis q. s. ad.....	3vi	180

M. Sig.: One tablespoonful every two hours if necessary.

Infant Feeding.

Prof. Rotch, in a recent address before the medical students of Chicago, emphasized the importance attached to accurate knowledge of preparing food for the infant and the ability to write a proper prescription whereby it may be prepared in the laboratory. He dwelt on the fact that infants thriving on the mother's milk containing a definite amount of proteids could not be placed on artificial food containing the same amount of proteids obtained from the cow's milk. The casinogen in the proteids of cow's milk seems to be the disturbing factor, thus producing the curds present in the stools, rather than the whey proteids. According to the author the casinogen should be reduced to a minimum to begin with and make up the necessary per cent. of proteids from the whey proteids. By overlooking the presence of the casinogen we fail in our efforts, where otherwise success might be obtained. That physician, according to Prof. Rotch, is not versed in the modern methods of percentage feeding who resorts to the use of the cereal products, otherwise starch, in combination with the milk in order to reduce the curds in the stools. The presence of starch more finely divides the curds and does not reduce their quantity. When sugar is deficient in the food he also insists on making up the deficiency by adding milk sugar (lactose) and not cane sugar as recommended by some authors. He, however, favors the mother's milk if it is borne by the infant to any moderate degree rather than to resort to artificial feeding.

Medicolegal.

Test of Nature of Incorporated Hospital Association.—In the case of *Craig vs. the Benedictine Sisters' Hospital Association*, the Supreme Court of Minnesota follows the rule that the nature and character of a corporation must be determined from its articles of association, and that its character can not be changed or modified by oral evidence that it is not in fact such a corporation as its articles purport to make it; that, in determining the character of corporations, the articles of association are the sole guide. In this case, the association was incorporated under the provision for the formation of corporations for a pecuniary profit, and, on the face of its articles of association, appeared to be an ordinary business corporation. The court holds that evidence offered for the

purpose of showing that it was in fact a charitable association, and not what its articles purported to make it, was incompetent and inadmissible. Whether a corporation organized for purely charitable purposes, and dependent on voluntary contributions for its support, is liable in damages for the negligence of its officers and servants, the court leaves an open question, so far as it is concerned.

Contract of Physician with Voluntary Association.—In the case of *McDermott vs. the St. Wilhelmina Benevolent Aid Society*, an action brought by a physician against the individual members of the society, a voluntary association, to recover for professional services, the Supreme Court of Rhode Island holds that, notwithstanding the association was a voluntary one and the physician did not receive a majority of the votes cast, nevertheless he was elected the physician of the association, and the individual members thereof were bound by the contract entered into with him. It appeared that he did receive more votes than any other candidate; that the president declared him elected, and directed the secretary to notify him of his election, to which proceedings no objection was made. Under these circumstances, the court does not think that the irregularity mentioned could properly be held to render the action void. It says that it was merely a technical violation of the rule, and it was doubtless competent for the society, if it saw fit, to dispense with the formality of taking a second vote. Moreover, by allowing the president to declare the physician elected as the physician of the association without dissent on the part of any one present, his election was practically made unanimous. Besides, the court holds that, after the association had recognized the fact that the physician was occupying the position to which he had thus been chosen by directing the secretary to notify him of his discharge therefrom and subsequently choosing another "for the balance of the present term," the technical irregularity stated could not be set up as a defense to his right of recovery for services rendered. It is a matter of common knowledge, the court says, that both corporations and voluntary associations often disregard, to some extent, the strict rules of procedure prescribed in their charters or by-laws in transacting their internal affairs; but, so far as this court is aware, the courts have not held that such technical variation from prescribed forms relieved them from liability to outside parties doing business with them in good faith on the strength of what appeared by their own records to have been regularly and properly done. Of course, the court says, no authorities need be cited to support the physician's claim that the contract with the association was consummated on his depositing his acceptance thereof in the mail, the acceptance having been made within a reasonable time after notice of the election. As to members of the association who were not present when the election took place, the court says that the presumption is that each person, on becoming a member of an association of this sort, knows and consents to be governed by the rules thereof; and hence whatever action is properly taken thereunder by the association is as binding on those members who were absent at the time it was taken as on those who were present. This individual liability arises, not on the ground that the members of such an association are partners, for they are not, but on the ground that the society is their agent in the premises; and hence they are bound by its acts if done within the scope of its authority. No compensation having been expressly fixed on by the association at the time of the election, and it appearing that the physician had previously served them on certain terms, the court holds that the presumption was, in the absence of any statement or agreement to the contrary, that his compensation would be the same as that previously paid. And it thinks pertinent instructions in which the jury were told that when one enters into the service of another for a definite period, and continues in the employment after the expiration of that period without any new contract, the presumption is that the employment is continued on the terms of the original contract. An express request from the parties sued to the physician to render services for them implied an agreement on their part to pay him what his services were reasonably worth.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Philadelphia Medical Journal.

March 14.

- 1 *Tropical Diseases—Eight Lectures in a Course on Tropical Diseases. Charles F. Kieffer.
- 2 Occlusion of the Superior Temporal Artery of the Retina in a Young Anemic Girl. G. E. de Schweinitz.
- 3 *Collective Investigation Concerning the Value of Silver-Nitrate Injections in the Treatment of Pulmonary Consumption. Thomas J. Mays.
- 4 *Some Points in the Management of Infectious Diseases. A. G. Young.
- 5 *The Treatment of Tropical Dysentery with Sulphur. T. H. Weisenburg.

1. **Tropical Diseases.**—The eighth lecture of Kieffer deals with the subject of filariasis. Of the various species of filariae there are only two inhabiting the blood that have a pathologic importance. They are the *Filaria nocturna*, formerly called *Filaria sanguinis hominis*, and the *Filaria perstans*. The former is the cause of the well-known condition known as elephantiasis. It is found in almost all tropical and sub-tropical countries, as far north as Charleston, S. C. In the large majority of cases it causes no symptoms, but in exceptional instances the conditions known as elephantiasis, chyluria, etc., are produced. They may be divided into two classes, those which are due to lymph varices and those due to edema or lymphatic obstruction. The worms may block the thoracic duct or they may injure some special portions of the lymphatic system and produce elephantiasis. He describes the different conditions and remarks briefly in regard to *Filaria perstans* which is supposed by Manson to cause the Congo sleeping sickness which has become so severe a scourge in some parts of East Africa. There still remains a group of filariae that invade the connective tissues rather than the lymph and the blood stream, the Guinea worm, the eye worm, and one or two others. Only the first of these is of special interest, as it may produce serious abscess and even death. The invasion of all forms of filaria is usually through drinking water, at least that is presumed to be the case.

3. **Silver Nitrate Injections in Tuberculosis.**—Mays has experimented with silver nitrate injections in the treatment of pulmonary consumption in fifty-two cases, with the result of arresting eleven and improving twenty-two, while seven were not improved and five died. There was a marked gain in weight in a large proportion of cases. Cough was relieved, which, he thinks, is due to stimulation of the vagus, increasing its resistance. Vomiting and night sweats were also notably relieved. He says:

Taking a general survey of the above collection of cases, and the therapeutic results which have been obtained through them, I think it is plainly evident that the silver nitrate injections possess a decided antagonism to the pathological and complex process which we know as pulmonary consumption. It must be borne in mind, however, that in forming an estimate of the action of a new remedy it is comparatively easy to overrate its virtues and to ignore the efficacy of other influences that enhance its final effects. But, making due allowance for all such weaknesses, we have in this collection a confirmation of the results which were obtained by myself with the silver injections employed in a large number of cases more than four years ago, differing from mine in the fact that they are more forcible, because they emanate from a number of independent observers in whom the personal equation was entirely eliminated. In conclusion, I trust that this research into the clinical action of silver nitrate in the treatment of phthisis will merely be an entering wedge into this inviting field of therapeutics and will induce many others to take up the work and develop its possibilities.

The directions for giving the injections are as follows:

Select for injection a point immediately over, or slightly behind, the pulsating carotid artery in the neck, between the angle of the jaw and the clavicle. Lift the skin between the thumb and forefinger of the left hand and puncture only immediately through the skin. Inject five minims of a 2½ per cent. solution of cocaine hydrochlorate, detach the syringe from the needle and let the latter remain in the puncture. Wash out the syringe with water, draw a 2½ per cent. solution of silver nitrate into the syringe, attach the latter to the needle and throw in 5 minims of same. Or, if cocaine nitrate can be secured, mix 6 grs. of this and 6 grs. of silver nitrate with half an ounce of water and inject 10 minims. This is a preferable method, but as yet there is very little cocaine nitrate on the market. As a rule, most of the injections should be given on the side below which the affected lung is located.

4. **Infectious Diseases.**—Young's article points out the various disorders which should be subject to notification and

isolation, including under this head tuberculosis, diphtheria, scarlet fever, typhoid fever, smallpox, pneumonia, grippe, whooping cough and measles.

5. Tropical Dysentery.—The results of treatment simply by the use of sulphur water of a special spring in the island of Marinduque, P. I., in cases of tropical amebic dysentery are reported by Weisenburg. The acute cases were kept quiet and simply put on a milk diet and made to drink the sulphur water of the spring exclusively and bathe in it every morning. The chronic cases were allowed to take moderate exercise, a soft diet, and take a bath twice daily and drink the sulphur water. In both classes improvement was marked. The patients gained in weight and strength and in three to six weeks were pronounced cured. A notable fact also was that rhobie itch, the prevalent skin malady of the tropics, was also cured by the same treatment. The spring is a large one and has long had a local reputation throughout the islands. Its water can be purchased in the drug stores in Manila.

Medical Record, New York.

March 14.

- 6 *Some Observations on Vulvovaginitis in Children (with Special Reference to the Gonorrheal Form); Its Treatment and Possible Sequelæ. Samuel W. Bandler.
- 7 *Clinical Notes on a Series of Nine Consecutive Cases of Ectopic Gestation. Hiram N. Vineberg.
- 8 *Mosquitoes, Quarantine, and Some Statistics with Regard to Yellow Fever. Quito Kohnke.
- 9 *The Indications for Opening the Pars Mastoidea. L. D. Brose.
- 10 *Hot Decinormal Salt Solution Injections in the Treatment of Hemorrhoids. Lucien Lofton.

6. Vulvovaginitis in Children.—Bandler's article deals especially with the gonorrheal form, though he admits that there may be a coccal vulvovaginitis not gonococcal. The most important sequelæ in the way of permanent injury is atresia of the hymen or of the vagina, and a considerable portion of his paper is devoted to this subject. All the lesions of the adult, however, may be reproduced in children.

7. Ectopic Gestation.—The nine cases reported by Vineberg are of interest as illustrating special points in the occurrence of this condition. In the first there was no delayed or irregular menstruation and the diagnosis of ovarian disease was a perfectly natural one. The second was a typical case. Others were complicated, with menstrual irregularities in the normal condition, which obscured the diagnosis. Others gave symptoms of early miscarriage. In still another an attack of acute appendicitis was thought probable. In all but two there was more or less elevation of temperature. In two cases it reached 102.6 and in one 103.8. It has been generally thought that absence of fever in ectopic pregnancy is an important diagnostic point, but these cases disprove this as an invariable rule.

8. Yellow Fever.—Kohnke takes issue with Souchon in regard to questions of quarantine in yellow fever, holding that the mosquito theory is absolutely correct and that the sulphur disinfection of vessels for the destruction of the mosquito is a matter which is being neglected under present rules in New Orleans.

9. Mastoid Operations.—Brose reports a case and notes the special indications for operation on the mastoid, such as pain, fever, pressure, tenderness, percussion dullness which is uncertain and should be sought for, swelling and edema, swelling of the posterior superior bony meatus wall giving rise to narrowing or total occlusion of the meatus, fluctuation in the external swelling, which should be sought for earlier in children than in the adult. With such symptoms, if persistent eight or ten days without improvement in spite of treatment, or when they have wholly disappeared, either with or without closure of the drum perforation, and again returned in severity and persistency, mastoid operation may properly be performed. Chronic disease of the mastoid may exist for years without sufficient evidence to warrant operative interference, but there is always danger of serious complications. Operative interference is urged for those that can not be otherwise relieved. As symptomatic of pus retention, we have a sudden diminution or total cessation of a profuse ear discharge, narrowing of the meatus or clogging of the tympanic cavity by granulations or polypi, fever and symptoms of

meningeal irritation. External abscess formation, with fistulous opening, leading into the middle ear or mastoid, in the adult especially, indicates operation. In children, however, drainage is good, nature may bring about a cure when assisted by local treatment. Cholesteatoma in the temporal bone may also require removal through a mastoid operation. The case reported illustrates a fatal termination following caries with acute mastoiditis. A large part of his paper is given up to the pathology of the condition and the special symptoms.

10. Hemorrhoids.—Lofton has employed hot decinormal saline solution injections in the treatment of piles with success in seventeen cases. The hot water burns the flesh, producing a simple scalding process which acts as does an escharotic, hence, a sloughing process must follow, resulting finally in elimination followed by granulation and a cicatrix. Owing to the great heat incorporated in this method, the albumin of the blood is immediately coagulated, and thus we have a circumscribed area of tissue walled off. The method, he says, is simple, cheap, effective, non-toxic and always safe. Boiling water thus used seems to act, in a measure, as a local anesthetic.

American Medicine, Philadelphia.

March 14.

- 11 *Obstinate Subacute Rheumatism. James J. Walsh.
- 12 *On Transplantation of Tumors. Leo Loeb.
- 13 *Fibroma of the Ovary with Ascites. Theodore A. Erck.
- 14 *Analyses of the Fluids from Two Cases of Hydrops Cystidis Felleæ. Torald Sollmann.
- 15 Emphysema Due to Injury of the Upper Air Tracts by Vomiting and Protracted Hysterical Eructations Following Ether Anesthesia for Appendectomy. Frank Blatchford.
- 16 *Briefs on Physical Training. G. Frank Lydston.
- 17 The Modern Maternity Hospital: Its Clinical Material Equipment and Influence upon Specialization in American Surgery. Barton C. Ilst.
- 18 Some Problems of Preventive Medicine. (To be concluded.) Burnside Foster.

11. Obstinate Subacute Rheumatism.—The failure of the salicylates in certain cases is first noticed by Walsh. He calls attention to the fact that a number of cases disagree with the general consensus of opinion in regard to the salicylates being the best remedies for rheumatic disorders. Among the conditions which may cause confusion and be erroneously treated with these drugs he enumerates gout, which he thinks is less infrequent in this country than has been supposed, certain nervous disorders, neuritis, alcohol and lead poisoning, and the joint affections of scurvy and hemophilia, influenzal and dysenteric joint symptoms, bronchiectatic and other joint disorders. He says that most of the cases of obstinate subacute rheumatism are not simple rheumatic arthritis, but consist of the joint affection developing in the presence of a diathesis, such as gout, or some blood dyscrasia, or some toxemia, or a neurosis, or a hypersensitive condition of the vasomotor system, all of which hinder the normal reaction and prevent the prompt relief of symptoms that usually occurs.

12. Transplantation of Tumors.—In a former article in the *Journal of Medical Research*, abstracted in THE JOURNAL, xxxix, 113, p. 399, Loeb reported the results of transplantation of sarcoma and mixed tumors. In the present communication he discusses the resisting powers of excised pieces of tumors and the influence of temperature, of preservatives, such as glycerin and potassium cyanid. He also speaks of the influence of bacterial products on the growth of transplanted pieces of tumors, the injection of tumor juice, the injection of filtrates of tumor tissue in sodium chlorid solution and, lastly, the injection of hyaline bodies to be found in pieces of tumors kept outside of the body. The conclusions to which the experiments seem to lead are given by him as follows:

A micro-organism living outside of tumor cells and passing through the pores of the Berkefeld filter is not, in all probability, the cause of the formation of sarcoma in rats.

A micro-organism living outside of tumor cells and resembling organisms like the tubercle bacillus, or belonging to the class of blastomycetes, is probably not the cause of the formation of sarcoma. Such a micro-organism would probably not be made absolutely ineffective by heating to 45 C. for half an hour. A microscopic examination of tumors not secondarily infected does not show any bacteria or blastomycetes. No giant cells characteristic of granulomas caused by the tubercle bacillus or by the blastomycetes can be found in these sarcomas.

The following possibilities remain: The formation of sarcoma is caused by an organism living outside the tumor cells, possessing,

however, a similar sensitiveness to heat as do the tumor cells themselves. Such organisms would have to be, as we may conclude from the foregoing experiments, larger than red blood corpuscles, as they seem to be unable to pass, at least under ordinary circumstances, through filter paper.

But, since a careful microscopic examination of the tumors showed no structures other than tumor cells and their products of degeneration, and since, also, injection of the hyaline bodies referred to had negative results, the existence of such organisms would seem to be improbable. Still, further experiments ought to be made before these can, with certainty, be excluded.

The remaining possibilities are that a very small micro-organism not capable of living outside of tumor cells is present; and, lastly, that a micro-organism is not the cause of tumor formation. It would, therefore, be impossible to produce tumors by the injection of micro-organisms alone. If a micro-organism incapable of living outside of tumor cells is present or if no micro-organism is the cause of tumor formation.

He adds some further results, stating that there is no appreciable period of latency in the growth of the peripheral transplanted tumor cells, that the serial sections have shown that apparently separate tumor nodules of sarcoma may be connected by rows of cells, just as Petersen showed the connection of apparently separated carcinomatous cell nests, and also that active mitotic cell proliferation takes place in tumor nodules. Sarcomatous cells are phagocytic and may take up extravasated blood corpuscles. The transplantation of sarcoma was even more frequently successful than that of carcinoma. He finds the results of transplantation of tumor cells as compared with that of ordinary tissue, seem to conclusively show that mere displacement of adult tissue, if it plays any part at all in tumor production, which is not probable, is certainly unessential. The fact that non-infected fresh pieces of sarcoma may be successfully transplanted into the majority of animals of the same species, shows that a predisposition is not the main factor which prevents or favors metastases. The transplantation of tumor cells through so many generations would seem to prove that the life of ordinary tissue may, under conditions not realized in one organism, be able to continue much longer than the individual to which they belong.

13. Fibroma of the Ovary.—Erek reports a case which he remarks is of interest from the standpoint of the association of ascites with solid ovarian growths. In fibroma of the uterus such complication is rare, while it is common in fibroma of the ovary. He thinks that, possibly, ascites may be due to something intrinsic in ovarian growths, perhaps a secretion.

14. Hydrops of the Gall Bladder.—From a chemical examination of two cases of occlusion or atresia of the cystic ducts, Sollmann deduces the following conclusions: The contents of the human gall bladder in cases of obstruction of the cystic duct, whether this is congenital or through a gallstone, consists in a dilute solution of true mucin, of the molecular concentrations of the serum, devoid of bile acids or pigments, of ferments and of sugar. Traces of coagulable proteid may be present. No nuclealbumin was found. The gallstones producing the obstruction consisted essentially of cholesterol.

16. Physical Training.—In this fifth section of his series, Lydston gives the details of muscle training, calling attention to the importance of the subjects fixing their attention on special groups of muscles. He also remarks on the vital importance of training the abdominal muscles, which he believes constitute the keynote of the athlete's body. The details of his paper can be best studied from the paper itself.

New York Medical Journal.

March 11.

- 19 *Some of the Complications of Abdominal Surgery. Robert T. Morris.
- 20 *The Diagnosis and Treatment of Hereditary Syphilis. E. Harrison Griffin.
- 21 *Some Observations on Tuberculosis. J. O. Cobb.
- 22 Report of a Case of Inguinal Hernia with Incomplete Sac. J. Shelton Horsley.
- 23 *Transportation and the Ophthalmic Referee. Justin L. Barnes.
- 24 Treatment of Infantile Convulsions. (To be continued.) Adah McMahon, Edward M. Thompson, H. R. Coston, G. J. Ellis and W. D. Macdon.

19. Complications of Abdominal Surgery.—Morris first notices the complications due to anesthesia, such as chloroform paralysis of the vasomotors, the effect of ether on the kidneys and stomach and bronchial membranes. He has never in his observation met with a death from the anesthetic, but, in a number of cases, he has been anxious. Ether complications

are not certain as regards prognosis, but are usually transitory. In some cases where acute nephritis has existed this seems to have been relieved by the anesthetic. Iodoform poisoning is also noted, as well as hemorrhage. The former is often mistaken for septicemia, but there is a striking difference, in that the septic wound looks ill as well as the patient, while in iodoform poisoning the wound appears to be doing very well, while the patient is not. He has seen one death occurring from iodoform poisoning after removal of all sources of the intoxication. The danger of shock in too long operations is also important, as well as sepsis.

20. Hereditary Syphilis.—Griffin reports a number of cases showing the mistakes in diagnosis that have been made in regard to this condition. He remarks that it is a common mistake to suppose that Hutchinson teeth are present as a rule; in fact, they are a rarity. The reason cases are not diagnosed is largely due to the reliance placed on this rare sign, the lack of information as to the manifestations of hereditary syphilis, and neglect to examine the buccal cavity.

21. Tuberculosis.—Cobb reviews some general facts and theories as regards tuberculosis, and is inclined to the belief that the danger of bovine tuberculosis is not altogether an imaginary one, though he admits that nearly all human tuberculosis is contracted by inhalation.

23. Transportation and the Ophthalmic Referee.—The importance of eye examinations of railroad employes, etc., is insisted on by Barnes, who criticizes the methods often employed, especially by lay examiners. Complete and accurate records should be kept, and the tests be thorough for color sense, vision and hearing. Lay examiners should submit all but the simpler, less complex cases to the medical referee, who should exercise a general supervision over the whole examinations. The rules for examining should not be left to private corporations, but should be regulated by the state.

Boston Medical and Surgical Journal.

March 12.

- 25 On the Educational Value of the Medical Society. William Osler.
- 26 *Limitations of the Uhlenhuth Test for the Differentiation of Human Blood. A. E. Austin.
- 27 *Report of a Series of Cases of Movable Kidney. H. D. Chadwick.
- 28 The Composition and Alcoholic Content of Certain Proprietary Foods for the Sick. Charles Harrington.
- 29 A Case of Habitual Dislocation of the Shoulder Joint. J. Collins Warren.

26. Uhlenhuth's Test.—Austin has experimented on the Uhlenhuth test, injecting rabbits and guinea-pigs several times with human blood to produce a serum containing precipitin for the human blood. Following Uhlenhuth's directions exactly he found the test not as fully applicable as it had been represented, and that it can be employed only under very limited conditions. Other fluids of the human body, like effusions and exudates, were of little value, and fluid from placentas could only be used when it was perfectly fresh. Much longer time and more repeated injections were necessary than he had been led to suppose. His experiments are given in detail.

27. Movable Kidney.—Chadwick has treated, during the last three months, twenty-eight patients suffering from symptoms referable to movable kidney, some of which are described in detail. He thinks the proper treatment of the affection depends more on the severity of the symptoms than on the amount of inability. Movable kidney often causes no troublesome symptoms, but when it affects the patient's health or limits her or his usefulness, there is only one treatment—that is, fixation—that will cure this condition. Palliative treatment has been of no value in his hands.

Medical News, New York.

March 14.

- 30 *The Etiology of Colds. James J. Walsh.
- 31 *Surgical Treatment in Non-Malignant Diseases of the Stomach: Results and Indications. Henri Hartmann.
- 32 *The Etiology of Ectopic Gestation. Samuel W. Bandler.
- 33 Apparent Fetal Substitution; Medicolegal Note. Allen J. Smith.
- 34 *The Elective System in Medical Schools. Daniel N. Elsen-drath.
- 35 *The Symptomatology of Tabes: an Analysis of 140 Cases of Locomotor Ataxia. Joseph Collins.

36 *Primary Tuberculosis of the Ear Followed by Mastoiditis: Report of Four Cases. M. A. Goldstein.

30. The Etiology of Colds.—The indefinite and little understood term, "cold," is remarked on by Walsh, who points out that cold can be only a predisposing cause, while, in most cases, it is a direct bacterial infection that occurs. Occasionally the breathing in of irritating substances may give rise to a catarrhal condition, resembling a cold. He considers that the method of steam and hot water heating in our houses, making no provision for the moisture necessary to keep the air in a properly humid condition, is especially favorable to the production of colds, particularly when it is suddenly changed to the cold air outside. He also notes that such effects are apt to occur when an individual comes out of a warm room, where a large number of persons is assembled or in which there has been considerable dust present, because of the movement of the crowd, dancing or gymnastics. Such places, moreover, are often absolutely shut off from sunlight, theaters particularly, and lose the benefit of this great bactericide. Delicate individuals should be warned of the necessity for avoiding such places, and stronger persons should not go immediately to the outer air without a preliminary delay in the corridors or foyer. Colds in the muscles are also mentioned, which are more often spoken of as neuralgia or rheumatism. The mechanism seems to be paralysis of the vasomotor apparatus in the parts from chill. A striking indication that a cold is due to microbial invasion is the fact that the process is nearly always accompanied by the occurrence of fever. Chilliness gives an indication for the first step in treatment, the elimination of toxic matters from the blood. The use of remedies that tend to lock up the secretions at the beginning of a cold is almost sure to be harmful.

31. Gastric Surgery.—The importance of early diagnosis as affecting the mortality of operation is first noted by Hartmann, who has examined twenty-nine patients operated on, noting the results of operation, and finds in non-malignant disease real and permanent benefit is the rule. Some special indications should be followed. A correct diagnosis is important. Atonic dilatation is rarely an indication for surgical interference; medical treatment will suffice. In pyloric stenosis operation is indicated as soon as the diagnosis is made, especially in all fibrous pyloric strictures. We can not be so positive in cases of ulcer of the stomach, as ulceration without complications is generally cured by medical treatment. In chronic ulcer he thinks that surgical treatment is indicated only when mechanical troubles exist and give the pyloric syndrome. Even if this be cured, the diseased cicatrix will produce a fibrous stricture more serious than the previous condition. He does not consider excessive hematemesis an indication for operation, but small and repeated hematemesis requires it. As to operation, he would only perform gastrectomy where an epithelial grafting is feared. Pyloroplasty of the German surgeons is not possible in cases of ulcer or of fibrous strictures of the pylorus in consequence of the rigid state of the tissue. Its rôle is a very limited one; he does not perform the operation. Gastroenterostomy seems, in the non-malignant diseases of the stomach, the best operation. With his technic, which he has described in his *Chirurgie Gastro-intestinale*, he has not observed one case of *circulus viciosus* in his 53 operations.

32. Ectopic Gestation.—Bandler reviews the causes of ectopic gestation and concludes that injury to the cilia is the chief, if not the sole, etiologic factor.

34. The Elective System in Medical Schools.—Eisendrath points out the benefits of the elective system in the last two years of the medical course, especially in our large institutions of the present time where otherwise direct contact with the teacher is not so practicable.

35. Tabes.—Collins finishes his article on tabes and gives the following percentage of the frequency of the most conspicuous subjective and objective symptoms: Lancinating pain, 90; Romberg sign, 85; loss of Achilles-jerk, 88; loss of knee-jerk, 84; Argyll-Robertson pupil, 77; ataxia of gait, 73; hypotonia, 72; paresthesia, 73; anesthesia, 67; analgesia, 58; bladder

symptoms, 55; impotency, 50; crises, 20; ocular paralysis, 10; arthropathies, 5; trophic symptoms, 8; optic atrophy, 14; girdle sensation, 50; deep sensibility, 63; diplopia, 22.

36. Primary Tuberculosis of the Ear Followed by Mastoiditis.—Goldstein reports four cases which he considers were primary tuberculosis infection and feels justified in this diagnosis. All of these cases, he says, were seen more than three years ago; 3 are still living, and careful physical examination fails to show any present tubercular affection. There are no evidences in the histories of these cases or in their clinical development, either of acquired or hereditary tuberculosis in the families of these patients. Of the 4 cases, 3 involved the mastoid cells extensively, and showed an unusually active and rapid invasion. All of the cases developed from a pre-existing otitis media suppurativa chronica, and appeared to him as direct infection by the bacillus tuberculosis. In the 3 cases where the mastoid operation was performed, the wounds healed by firm granulations, and all evidences of tuberculous trouble ceased with the removal of the local process. This is in direct contrast to the healing of wounds in patients where the systemic tubercular invasion is present. The data which have been furnished in the cases herein reported all point to definitely localized specific infection of the cavum tympanum and mastoid cells, with the characteristic development of a tuberculous process as it occurs in bone tissue, and with the definite demonstration of the bacillus tuberculosis in 1 case.

St. Louis Medical Review.

March 14.

- 37 Postmortem and Chemical Findings in Acute Arsenical Poisoning and Phenol Poisoning. R. B. H. Gradwohl.
- 38 Some Remarks on the Clinical Aspect and Diagnosis of Incipient Tuberculosis. Arch Dixon, Jr.

Cincinnati Lancet-Clinic.

March 14.

- 39 Paraffin Injections in Facial Deformity. John W. Murphy.
- 40 Surgery of Prostate, Pancreas, Diaphragm and Spleen. (Surgery of Pancreas.) B. Merrill Ricketts.

Medicine, Detroit.

February.

- 41 *Lateral Curvature of the Spine. James K. Young.
- 42 *Some Practical Thoughts on Pneumonia. J. M. Anders.
- 43 *Some Problems of Tuberculosis. Roland G. Curtin.
- 44 *An Examination into the Value of Certain Antiseptics Used for the Preservation of Antitoxic and Other Immune Serums. Joseph McFarland.
- 45 Problems in the Laboratory Study of Diphtheria. F. F. Westbrook.

41. Spinal Curvature.—The causes, mechanism and treatment of lateral curvature of the spine are described at length by Young, who treats it by developing the weak muscles by collective or individual exercise, slightly over-developing them; later uniform development of all the muscles, and the use of special movements to prevent relapse. He divides the condition into three degrees: If the curvature entirely disappears on self-suspension it is of the first degree; if it is somewhat affected, but not entirely corrected, it is of the second; and if not affected whatever it is of the third degree. In the latter cases, the prognosis, of course, is very much more unfavorable. The first degree may be cured, the second influenced by treatment, but the last is incurable.

42. Pneumonia.—The increase of pneumonia in recent years is noted by Anders, who gives statistics to show that it is a fact. He thinks it may be due to a great extent to certain degenerative tendencies of modern life, and mentions especially the enormous consumption of malt liquors, which has a bad effect in this particular way. As to its contagion he holds there is good reason to regard it as a fact, notwithstanding the denial by Aufrecht. Pneumonia due to the streptococcus has been common of late years, and he calls attention to the differences between that and the ordinary pneumococcal form. It may assume the type of so-called serous pneumonia, which is really a streptococcal process. There are cases of pneumonia that seem to answer clinically to the variety known as typhoid pneumonia, but he finds that many of these are of pneumococcal origin. The typhoid pneumonia and the asthenic type have become much more common of late years, and he attributes them to the causes first mentioned. Leucocytosis

has been attracting attention. He finds a mild form occurs in light cases, but not so commonly as in malignant types. The highest count usually occurs immediately before the crisis and falls remarkably afterward. Jaundice, when it occurs, he thinks, may be in exceptional instances due to an intense toxemia, but it is in nearly all cases an obstructive jaundice. The diagnosis of aberrant cases may be difficult. The treatment is unsatisfactory. • We should use prophylactic measures, disinfection of sputum. We have nothing that will destroy the infecting organism, but we should promptly interfere when cardiac weakness or systemic exhaustion threatens. He has much confidence in oxygen by inhalation and also in normal saline solution; hydrotherapy in many cases meets the indications better than drugs.

43. **Tuberculosis.**—Curtin discusses the contagiousness of tuberculosis, which he thinks has been over-estimated; also the futility of legislation against it. He puts considerable stress on the heredity of the condition favoring an outbreak of the disease, and gives cases to show that pulmonary defects in parents before the birth of a child may leave their impression on the pulmonary tissues of the offspring.

44. **Antitoxin Preservatives.**—McFarland finds that formaldehyde is the only really effective antiseptic in antitoxin cultivation. Unless the pain it causes or the poisonous influence of phenol should be held to outweigh the advantages of trikresol, he would recommend that the use of the latter be abandoned.

International Medical Magazine, New York. February.

- 46 *Etiology of Catarrh of the Nasopharynx. Charles W. Richardson.
- 47 *Do Nasal Diseases in Any Way Predispose to or Cause Pulmonary Disease? E. L. Shurly.
- 48 *Can Hypertrophic Rhinitis Be Cured by Other Than Surgical Measures? Jacob E. Schadle.
- 49 *Chronic Nasal Catarrh in Its Relation to Asthma. P. J. H. Farrell.
- 50 *Galvano-cautery in Hypertrophic Rhinitis. Carl Seiler.
- 51 Etiology and Pathology of Catarrhal Conditions of the Nasopharynx. D. Braden Kyle.
- 52 The Influence of Catarrhal Diseases of the Nose and Throat in Producing Speech Defects in Children. G. Hudson Makuen.
- 53 Atrophic Rhinitis. J. A. Stucky.

46. **Nasopharyngeal Catarrh.**—Atmospheric changes as a cause of catarrh of the respiratory tract are first noted by Richardson, who says the occurrence of acute colds in rapid succession sets up a true catarrhal condition, while the modern methods of house-heating, imperfect ventilation, the excessive use of tobacco, alcohol and so on, all have their influence on the production of the disease. Improper clothing is also another important cause. He notices the digestive disorders which may follow it. The constitutional disorders which may predispose, such as lithemia, rheumatism, neurasthenia, tuberculosis, and so on, the local changes in the nasal chambers such as septal deformities, also causing alterations of the mucosa, which are followed by similar changes in the pharynx, are noted.

47. **Nasal and Pulmonary Disease.**—Shurly concludes from a study of chronic nasal affections that it is not feasible to regard chronic nasal or nasopharyngeal disease as especially concerned in producing chronic pulmonary disease. As regards acute pulmonary disease, there are certainly conditions which invite attacks by continuity, producing bronchitis, pneumonia and so on, and making the subjects more liable to other diseases.

48. **Hypertrophic Rhinitis.**—In answer to the question in the title of his article, Schadle gives a definite "No." He discusses the causes of hypertrophic rhinitis, the methods of treatment, the acid caustic method, the use of the electro-cautery, of which he is an advocate and the use of the snare for papillary hypertrophy.

49. **Nasal Catarrh and Asthma.**—Eighty per cent. of Farrell's asthmatics were cured by removal of the abnormal condition of the nasopharynx, classed under the general head of chronic nasal catarrh. Of the remaining 20 per cent. one-half were benefited. He has never failed to cut short an acute attack, no matter how severe, with a hypodermic injection of

cocain or morphin. Atropin 1/100 hypodermically or 2 per cent. cocain solution applied to the nasal chambers he has found will give equally prompt relief. He says in the search for the underlying cause of the bronchial spasm, eliminate cardiac trouble, renal disease, gastric and intestinal disturbances, chronic bronchitis, rheumatism, gout and all dyscrasias of the blood, and then examine the nose and throat. Whatever may be the pathology of asthma, the exciting cause is frequently found in the nasal chambers and the greatest number of cures results from removal of such causes.

50. **Hypertrophic Rhinitis.**—The galvanocautery in this condition has been advocated by Seiler, who describes the technic. He has also found it exceedingly valuable in hay fever if the following simple precautions are observed: Not to attempt any cauterization until the paroxysm is completely passed and all inflammation has subsided, as in the winter months; to cauterize only the small areas of irritability which can be brought into view by the touch of the tip end of a probe, but without cocain, as this drug prevents the erection of the turbinate tissue and interferes with the sensitive spots becoming visible; never use the flat surface of the knife and never cauterize more than three or four of the sensitive spots at one sitting and then in one anterior nasal cavity only. He would not apply it in the posterior pharynx nor during the stage of acute inflammation.

Archives of Ophthalmology, New Rochelle, N. Y. March.

- 54 *A Case of Primary Epibulbar Sarcoma, with Secondary Growths in Limbus and Sclera, and Invasion of the Choroid, Ciliary Body, and Iris. Frederick H. Verhoeff and Robert G. Loring.
- 55 The Accuracy Requisite in Vision-Testing. Kenneth Scott.
- 56 The Ophthalmoscopic Appearance of the Ora Serrata and the Ciliary Processes. M. Reimar.
- 57 On Indirect Ruptures of the Iris. Georg Levinsohn.
- 58 On the Anatomy of the Ganglion Cells of the Retina. G. Abelsdorf.
- 59 *A Contribution to the Differential Diagnosis between Glioma of the Retina and Pseudoglioma. Julius Fejer.
- 60 On Paralysis of Latero-version. Otto Wernicke.

54. **Primary Epibulbar Sarcoma.**—Verhoeff and Loring report a case of interest as showing the malignancy of this condition, which they discuss at length. Their conclusions are given in substance as follows: Epibulbar sarcoma differs from the usual form in malignancy only so far as it is isolated on the highly resistant cornea and sclera, and comes to operation relatively small. Notwithstanding its malignancy, it rarely penetrates the eye. Recurrences almost invariably, sooner or later appear after abscision and general metastases are not infrequent. Immediate enucleation should be advised in all cases after microscopic diagnosis, but the patient should be consulted as to operation after having been fully informed as to the unfavorable prognosis. They give a brief résumé of the cases reported and an extensive bibliography.

59. **Glioma and Pseudoglioma of the Retina.**—Fejer reports a case and discusses the diagnosis and symptoms of the condition. Errors of diagnosis can not well be avoided.

Louisville Monthly Journal of Medicine and Surgery. March.

- 61. Pneumonia, with Some Unique Complications. B. A. Allan.
- 62 *The Surgical Value of the Stomach Tube and the Rectal Tube. Horace J. Whitacre.
- 63 The Ultimate Results of Treatment in Uretero-Vaginal Catarrh of Virgins. John A. Hale.
- 64 Simple Mania. Cassius D. Mansfield.
- 65 The Treatment of the Third Stage of Labor. Turner Anderson.

62. **The Stomach and Rectal Tube.**—The surgical uses of these instruments are enumerated by Whitacre, who deals particularly with their therapeutic uses. The stomach tube, for instance, is of special value in intestinal obstruction, in appendicitis and in emptying an overfull stomach. It is of special value, also in cases of cancer of the stomach. It ought also to be employed more where operation has to be performed without preparation on a full stomach, and he thinks the persistent vomiting after anesthesia can often be relieved by washing the stomach out before the patient has left the operating table and while still under the influence of the anesthetic. The uses of the rectal tube are numerous. He mentions espe-

cially the value of high enemata in the treatment of disease where it is not advisable to give nourishment by the mouth, as in appendicitis or other peritoneal affections, also for moving the bowels after abdominal operations. Rectal feeding is also described. We should bear in mind that the rectum does not digest, therefore proper foods should be used and injected at the proper temperature, about 100 F., in the upper part of the rectum. Not more than four to six ounces should be given at one time. The interval between feedings should never be less than four hours, and preferably five or six. The rectum should be washed with sterile salt solution at least one hour before each feeding. The catheter and syringe should be kept in an aseptic condition and the bowels moved daily by a simple soap-suds enema.

Proceedings of the Philadelphia County Medical Society.

February 28.

- 66 Nephropexy in a Case of Chronic Nephritis. J. Norman Henry.
- 67 *An Inquiry Into the Value of the Irrigation Method as a Means of Aborting and Treating Acute Specific Urethritis. Orville Horwitz.
- 68 *Trunczek's Serum and Its Value in Disturbed Cerebral Functions Caused by Circulatory Changes, with Reports of Twelve Cases. Alfred Gordon.
- 69 Report of a Case Illustrating Importance of Operation in Certain Cases of Facial Paralysis. Levi J. Hammond.
- 70 The Treatment of Carcinoma of the Rectum by Mercuric Cataphoresis. G. Betton Massey.

67. Gonorrhea.—The defects of the irrigation method are reviewed at length by Horwitz, who concludes that it will not abort specific urethritis, though it will hasten the terminal stage which is prolonged and difficult to cure. Chronic urethritis and involvement of the deep organs are common sequences. To effect a cure in the later stages of the disease irrigation must be discontinued and other methods employed. It should not be employed in the acute stage of specific urethritis nor should irrigations in the deep urethra by hydrostatic pressure be used in the majority of cases of acute gonorrhea as it is conducive to the development of complications.

68. Trunczek's Serum.—This serum, as modified by Léopold-Lévi, has been used by Gordon in a number of cases of arteriosclerosis with considerable benefit in some of them. Its combination in this modification is sodium chlorid, 10 gm.; sodium sulphate, 1 gm.; sodium carbonate, 0.40 gm.; sodium phosphate, 0.30 gm.; calcium phosphate and magnesium phosphate, of each, 0.75 gm. The mixture makes thirteen powders. Each powder corresponds to 15 c.c. of the fluid serum, or 150 c.c. of blood serum. The method employed by Gordon was the internal treatment. He concludes that this combination may be a valuable remedy in some cases of disturbed cerebral function caused by circulatory changes, and this not only by hypodermic and intravenous administration, but also internally. When the iodids, nitrites and other means used in such cases are without avail, Trunczek's serum should be given a trial. Sometimes a combination of both may be necessary. Several days, at least a week, must elapse before the desirable results can be expected. There are cases, however, in which the remedy is absolutely useless.

California State Journal of Medicine, San Francisco.

February.

- 71 *Symposium on Hydrotherapy—Hydrotherapy. George A. Hare.
- 72 *Hydrotherapy in Typhoid Fever. Frank L. Adams.
- 73 *Hydrotherapy in the Treatment of Pneumonia. A. J. Sanderson.
- 74 *Spinal Anesthesia with Tropa-cocain in Genito-Urinary Surgery. M. Krotoszyner.
- 75 On Ptomaline Poisoning. E. O. Jellinek.
- 76 Supplemental Report on Hygiene. H. J. Crompton.
- 71.—See abstract in THE JOURNAL, xxxviii, p. 1265.

72. Hydrotherapy in Typhoid.—Adams' article treats of the advantages of hydrotherapy in typhoid fever, giving statistics showing the decrease of mortality under the improved methods in this disease, from between 40 and 50 per cent. down to almost nothing under skilled care. The technic of the Brand method is described and the objections answered. The beneficial effects of the bath are enumerated at length, also the conditions which contraindicate and do not contraindicate it. Among the former he includes severe hemorrhage, extreme cardiac weakness, peritonitis, great reduction of strength in

the third week of the fever, perforation, severe pneumonia or pleurisy and extreme nervousness on the part of the patient in some few cases. For the aged and enfeebled it would also require some modifications. In conclusion, he gives a summary of answers of correspondents in California as to their methods, showing the large percentage in favor of this method of treatment.

73. Hydrotherapy in Pneumonia.—Sanderson advises the use of hydrotherapy in pneumonia and describes the method of applying it, the full body pack, leg pack, cold compress, fomentations, cold friction, bowel irrigation, etc.

74. Tropa-Cocain Anesthesia.—Krotoszyner has used tropa-cocain for spinal anesthesia in some 120 cases and highly recommends it. He has never observed the excruciating headache sometimes following cocain injections, and only in a very few cases any disagreeable symptoms whatever. The only danger with this method of anesthesia is in sepsis to the spinal canal and, therefore, he does not use it in private houses. Thus far he has not had a mishap and thinks it no more dangerous than any other form of anesthesia.

Southern Practitioner, Nashville, Tenn.

March.

- 77 *Treatment of Malaria. D. B. Blake.
- 78 *Remarks on Surgery of the Prostate Gland. James W. Handley.

77. Malaria.—The paper of Blake covers the subject very completely, adopting in full the mosquito theory and insisting on prophylaxis as far as possible by extirpation of the mosquito. He thinks probably the best larvicides are the aniline dyes recommended by Celli, though he has not yet been able to obtain them. Fish in waters are very like dragon flies in the air and are only an adjunct to other methods of destruction of the mosquito. The most important measure of all is protection of houses by wire netting. The location and construction of the dwelling is a matter of some importance. The anopheles do not fly high or far, and it is well to build on elevations, as far as possible from breeding places, and sleep on the second and third floors, having the windows well screened. While quinin is a specific, its use requires some skill and the best time to administer it is at such periods as will ensure the presence of the remedy in the blood in sufficient quantities when it is most flooded by the parasites. The end of the febrile period seems to be the most favorable time. When symptoms are urgent, however, we can not wait for this, and the drug should be given as soon as possible and in such quantities as may ensure its absorption, with other remedies to relieve glandular torpor, and sometimes hypodermics of morphin, if not contraindicated, at the onset of the cold stage may be of use. In some cases with gastric irritability, administration of medicines must be per rectum. Next to the cinchona preparations, arsenic is the most reliable drug. He advocates popular education on the subject of malaria and its prevention as one of the valuable methods of aiding sanitation.

78. Prostatic Surgery.—Handley favors Wishard's method of combined perineal section and Bottini cauterization.

The Laryngoscope, St. Louis.

February.

- 79 *Congenital Cleft of the Palate—A Further Report upon the Operative Technic and Its Results. James F. McKernon.
- 80 *The Falsetto Voice; Origin and Respiratory Treatment; Dental Irregularities. Marcel Natier.
- 81 *Excision of the Epiglottis for Lupus. Talbot R. Chambers.
- 82 Perichondritis of the Larynx. Marshall R. Ward.
- 83 Some Critical and Desultory Remarks on Recent Laryngological and Rhinological Literature. Jonathan Wright.

79. Cleft Palate.—McKernon describes at length his technic of operation and speaks strongly in favor of tracheotomy as an adjunct. The patient can thus be treated as if the operation were anywhere else in the body, the patient breathing freely through the tracheal tube. The length of time required is reduced fully one-half, and the danger of getting fluid into the trachea, etc., is very much lessened. The operation generally seems successful.

80. The Falsetto Voice.—From the study of a case observed which is illustrated by tracings, Natier finds that the falsetto voice is caused by respiratory troubles, which can be corrected

by respiratory gymnastics as the most efficient and rapid method of treatment.

81. **Excision of Epiglottitis.**—Chambers reports a case, the second on record at the time of his operation, which was done for a condition which seems to have been lupus, though another diagnosis had also been made.

New Yorker Medicinische Monatschrift. January.

- 84 •Die Grenzen zwischen vaginaler und abdominaler Coeliotomie. H. J. Boldt.
85 •Erfahrungen mit perinealer Prostatectomie. F. Kammerer.
86 Xanthoma tuberosum diabetorum. Edward Plisko.

84. **Vaginal and Abdominal Celiotomy.**—Boldt advises the vaginal operation in a large number of conditions. Suppurative salpingitis, where the pus sacs are low in the pelvis, he would treat by opening through the vagina and drainage, a method which he has employed in some thirty-seven cases, producing nine symptomatic cures, fifteen improvements and only five had to be radically operated on later. He would also use it for ovarian tumors not larger than a man's head, which can be reached through the Douglas cul-de-sac, in degenerative ovaries which produce uncomfortable symptoms, in abscesses of the ovaries and all suppurations which are operable through the vagina. Uterine myomas should only be attacked when they produce uncomfortable symptoms. Submucous myomas amounting to 10 cm. in diameter can be attacked from below by slitting the anterior uterine wall. Small subperitoneal myomas rarely cause trouble. If the whole uterus is to be removed the abdominal method is to be preferred, since, by this method, one can leave intact the adnexa with a part of the endometrium, as recommended by Zweifel. Nervous phenomena and following hysteria are not so likely to occur. He considers, for operations on the uterus for displacements and retroflexions, that the Alexander is the ideal operation. He would close the wound by the Bassini hernia method in case of no suppuration. In mobile retroversions he would not advise opening the abdominal cavity, but the condition is different in fixed retroflexions. Vaginal celiotomy in extrauterine pregnancy is limited to those cases in which the diagnosis is made before rupture and, secondly, to those where hematocoele has already formed and expectant treatment is contraindicated. In cancer of the uterus abdominal extirpation has had many supporters. Whether statistics will favor their views time alone will tell. He is at present of the opinion that the vaginal radical operation, with the aid of the galvanocautery, may give as good results as abdominal operations.

85. **Prostatic Hypertrophy.**—Kammerer favors the perineal method in this condition. It radically removes the trouble and prevents relapses. Its mortality is not greater than after the galvanocautic method.

Memphis Medical Monthly. February.

- 87 The Nature and Treatment of the Dyspepsia in Consumptives. Paul Paquin.
88 •The Treatment of Acute and Chronic Dysentery. M. Goltman.
89 Kidney Complications in Estivo-autumnal Fever. Ira B. Bartle.
90 A Case of Smallpox, with Sequelæ. W. T. Braun.

88. **Acute and Chronic Dysentery.**—The conclusions warranted by Goltman's experience are given by him as follows:

1. The treatment of dysentery, acute or chronic, by topical application is most rational. 2. Topical applications are useless unless large volumes of fluid are used to distend the bowel. 3. Topical applications, as usually made, are very painful in all cases, particularly in those that are acute. 4. Topical applications, to be thorough and far-reaching, are unbearable to the patient, on account of the extreme pain they cause. 5. Anal division is a prime factor in facilitating the work of flushing the colon. Resistance to the escape of fluid is removed, and it markedly relieves the tenesmus. 6. Anal division, cauterization of ulcers through the proctoscope, passage of a tube high up into the sigmoid through this instrument and thorough distension and flushing of the gut are absolutely impossible without the aid of anesthesia. 7. Anesthesia rather relieved than produced shock in my cases. These patients seemed to take as kindly to chloroform as women in childbirth. 8. In my judgment, one is more likely to overdilate and perforate the gut without anesthesia than with it.

Medical Review of Reviews, New York. February 25.

- 91 •Food Preservatives: Their Use and Abuse. Willis G. Tucker.
91½ A Case of Exhibitionism. W. L. Robins.

91. **Food Preservatives.**—Tucker reviews the various methods used for preserving foods, and holds that borax, which has long been used, is not particularly deleterious in the quantities in which it may be ingested in food thus preserved. Still, he thinks it will be advisable to prohibit its use in milk, but not in certain other food products, such as those where small amounts are required, as in butter, cheese and cream, and in dusting of ham or bacon. Salicylic acid has been largely used and, if limited to such things as catsup, which is used in small quantities at a time, it is not likely to do harm, but if used in beer or drinks, of which large quantities may be taken, it is very objectionable. Benzoic acid is considered to be somewhat less objectionable, but its indiscriminate use should not be sanctioned. If, for example, it were added to cider in the maximum quantity recommended, a quart might contain as much as 12 grains, which is certainly too much. The sulphites and bi-sulphites should not be permitted in food. Formaldehyd is principally used in milk, and this ought never to be permitted. It directly interferes with digestion. Betanaphthol is another preservative which should be viewed with disfavor. Saccharin is, perhaps, somewhat better. He is inclined to doubt the wisdom of absolutely prohibiting its employment in the present state of our knowledge. The fluorids are supposed to be comparatively rarely used in this country, but he thinks, perhaps, their use is not so uncommon, and the subject needs further investigation. Pyroligneous acid is used as a substitute for smoking meats and, while we are not perhaps justified in saying that foods thus preserved are injurious, they certainly should not be called "smoked" or sold as such. Abrastol or asapol, the calcium salt of betanaphthol-sulphonic acid, which possesses marked antiseptic properties, has been more or less used as a preservative, but would seem to belong to a class of compounds which should not be permitted. He thinks, however, that too much extreme legislation should be discouraged. The specific prohibition of certain articles not universally conceded to be harmful is unwise, especially as our present laws specifically forbid the addition to foods of any poisonous substances or any that may render such article of food injurious to the health of the person consuming it, as is now the case in many of the states. He thinks, however, that it would be a good law that would require in the case of every food article, in the preparation of which preservatives other than certain articles, such as sugar, salt, etc., are employed, the fact of such employment and the quantity used, plainly stated on the package. Massachusetts has recently passed a law of this description.

The Post-Graduate, New York. March.

- 92 •Aseptic Preparation for Surgical Work in Country Practice. R. T. Morris.
93 Methods and Means for Treating Gonorrheal Urethritis in the Male. James Pedersen.
94 Notes from the Clinics: Epistaxis. Bryan D. Sheedy.

92. **Aseptic Preparations.**—The methods of country surgical practice are mentioned by Morris, who tells how to provide for, impromptu, some of the necessities, such as absorbent cotton, sterilization of vessels and instruments. He advises avoidance of absorbent dressings directly to the wound. As to disinfection of the hands, he considers it can be done fairly well by using a 2000 bichlorid of mercury solution for two minutes and, still better, by scrubbing the hands in a mixture of carbonate of soda, chlorid of lime and water, in which the nascent chlorine gas penetrates the interstices about the nails and hair roots. This gives him the best results in hand sterilization. He is experimenting with a method which, he thinks, will be of value, using a germicidal depilatory for removing the hairs, etc., on the surface about to be operated on. He deprecates the disuse of anesthetics in certain lesser operations, dressing of burns, etc., in country practice and in the smaller towns, and believes that we can not do as good work unless we anesthetize in such cases.

Virginia Medical Semi-Monthly, Richmond. February 27.

- 95 1. Cirsoid Aneurism of Scalp. Treated by Ligation of Both Common Carotid Arteries. 2. Chronic Posterior Urethritis. Treated by External Perineal Urethrotomy and Drainage. 3. Lupus. Treated by the X-Ray. Stuart McGuire

termination of vipers or procuring them alive for Calmette, who paid ten cents apiece for them to use in the production of his antivenom. The man's father had followed the same occupation. Both acquired immunity to viper bites in time, but the son showed no signs of inherited immunity. It increased in the son with the frequency of the bites and diminished as the intervals between them became longer. He found cauterization with a concentrated solution of chlorid of gold and phenic acid extremely effective for local treatment of the bites. His death did not seem to be attributable to the vipers, but was the result of diarrhea from exposure, etc.

Bulletin Gen. de Therapeutique, Paris.

- 34 (LXXII, 1.) *Sulphur Baths in Syphilis. Dresch.—Medication thermique dans la syphilis.
- 35 Discussion: Fixation de la ration alimentaire. Barbier and others.
- 36 (No. 2.) *Application thérapeutique des decovertes de Pawlow. Haillon and Carrion.
- 37 *Traitement abortif des furoncles par une solution concentrée d'iode dans l'acétone. P. Gallois and Courcoux.
- 38 *Nouveau mode d'administration de l'huile de chaulmoogra. H. Danlos.
- 39 (No. 3.) La question des doses de mercure at du traitement du tabes et de la paralysie générale. Leredde.
- 40 Resultats fournis par l'emploi de l'arrhéol dans la peste, le mugana, le mal de cadere, la fièvre de Texas et la malaria. A. Gautier.
- 41 Le traitement des néphrites. Museller. (Commenced in No. 2.)
- 42 (No. 6.) *Note sur un nouvel emploi thérapeutique de l'hyposulfite de sodium. Claret.
- 43 *Observations d'hémorragies viscérales graves arrêtées par l'injection de sérum gélatiné. Collet.
- 44 Beeswax as Vehicle for Drugs to Act in Intestine. Maurel.—De l'incorporation de certaines médicaments dans la cire pour qu'ils ne soient mis en liberté que dans l'intestin.
- 45 *Action du bleu de méthylène sur les ulcérations des tuberculeux. L. Renon and E. Geraudel.
- 46 Sur l'innocuité absolue de l'acide phosphorique. F. Cautru.
- 47 (No. 7.) Sur quelques phénomènes (inner phenomena) de la nutrition et des sécrétions. J. Renaut. (Commenced in No. 5.)
- 48 Rational Bicycle Seat. R. Couetoux.—La selle de bicyclette rationnelle.

34. To Derive Greatest Benefit from Sulphur Baths in Syphilis.—Dresch points out that if sulphur baths are taken after a course of mercurial treatment, the benefits of the latter are annulled to a great extent as the mercury is eliminated by the waters. On the other hand, if mercurial treatment is instituted after instead of before the sulphur baths, the benefits are immeasurably increased as the system is swept and garnished ready for it. In cases of recurring syphilitic manifestations or merely as a preventive measure, the maximum effect is attained by this combination of mercury following a course of hot sulphur waters.

36. Therapeutic Application of Pawlow's Discoveries.—The discovery that the trypsin of the pancreatic juice is impotent unless its action is solicited by the presence of another ferment which is supplied by the duodenum, has suggested that it may be possible to artificially supply this latter ferment. Hallion and Carrion call the extract of the duodenal mucosa of the pig, which they present for the above purpose, "eukinase." They use it with or without combination with pancreatic juice, in gluten capsules, and hail it as the intestinal "eupeptique par excellence," although it is yet too soon for the sanction of clinical experience.

37. Improved Technic of Iodin Treatment of Boils.—Gallois has found that a combination of 4 gm. of metallic iodine in 10 gm. of acetone is much more effective than iodine alone in the abortion of boils and pimples. He applies it on a cotton pledget on a toothpick. If the lesion is in a particularly sensitive region he applies it very lightly, and if the furuncle has been opened it may smart a little. A drop of a solution of cocaine may be advisable for timid persons in such cases. According to his experience this treatment will certainly abort a furuncle or pimple if taken in time.

38. Rectal Administration of Chaulmoogra Oil.—Danlos mixes warm 75 c.c. of milk and 12 c.c. of chaulmoogra oil, and injects it per anum in case of gastric intolerance. He has thus given it twelve times in one case of leprosy and the alvine discharges the next day showed no trace of oil, showing that it must have been duly absorbed.

42. Hyposulphite of Sodium in Dental Caries.—Claret extols the prompt relief and deodorizing effect of the applica-

tion of a saturated solution of hyposulphite of sodium in two cases of dental caries of the fourth degree.

43. Gelatin in Visceral Hemorrhages.—The first case described by Collet was that of a man of 45 vomiting blood. A subcutaneous injection of a 1 per cent. solution of gelatin in artificial serum was followed in fifteen minutes by a slight hematemesis, probably of the blood already in the stomach at the time, after which the hemorrhage was entirely arrested. Recurring hemoptysis in the second case was checked permanently by a single injection of a 2 per cent. solution. In the third case the patient was a man of 27 in advanced tuberculosis, with daily hemorrhages from the lungs. They were not arrested by the injections of gelatin until the strength was increased to 4 per cent. which definitely abolished further trouble from this source. Collet's experience indicates that the increased coagulability of the blood conferred by the gelatin is comparatively transient, and that one need not hesitate to repeat the injections if the hemorrhages recur.

45. Methylene Blue for Tuberculous Ulcerations.—Renon found that tuberculous ulcerations in the mouth rapidly healed over under daily insufflation of methylene blue in powdered form. In three of the five cases the lesions completely healed and in every instance they cleared up promptly, while pain was relieved at once. He is now studying its action on the ulcerative enteritis of tuberculous subjects, and can already announce that the diarrhea diminishes from the first and in some cases is entirely cured.

Archiv f. Path. Anat., Etc. (Virchow's), Berlin.

- 49 (169, 3.) *Ueber idiopathische Stauungsleber (passively congested liver). M. Penkert.
- 50 Ueber einen Fall von Doppel-Carcinom der Gallenblase (gall bladder), zugleich ein Beitrag zur Metaplasie-Frage (question). J. G. Monckeberg.
- 51 Weitere kritische Ausführungen zum gegenwärtigen Stand (present status of) Plasma-Zellen-Frage. Dazu ein Anhang die Histologie des Tuberkels betreffend. A. Pappenheim.
- 52 Ueber Plasma-Zellen und Lymphocyten. A. Schlesinger.
- 53 Die Chemie und Physiologie des Kropfes (of goiter). A. Oswald (Zurich).
- 54 Experimental Glycosuria Induced by Adrenalin, Reducing Substances and Other Toxins Acting on Pancreas Cells. C. A. Herter and A. J. Wakeman.—Ueber Adrenalin-Glykosurie und verwandte durch die Wirkung reduzierender Substanzen und anderer Gifte auf die Pankreas-Zellen hervorgerufene exp. Glykosurien.
- 55 *Ueber den Ort der Wärmebildung (point of heat production) in dem durch Gehirnstich erzeugten Fieber (in artificially induced fever.) E. Aronsohn.
- 56 Ueber die Benda'sche Reaction auf Fett- (fat) Nekrosen. W. Ljepmann.
- 57 (170, 1.) Beitrag zur Lehre vom Bau und Wachsthum der Lymphangiome. C. Sick.
- 58 Histologische Veränderungen im menschlichen und tierischen (alterations in human and animal) Nerven-System, theils als Biltz-theils als elektrische Starkstromwirkung (from powerful electric action). S. Jellinek.
- 59 Fat in Kidney Infarcts and Fatty Degeneration. F. Fischler.—Ueber den Fettgehalt von Nieren-Infarcten, zugleich ein Beitrag zur Frage der Fett-Degeneration. Experimental Research.
- 60 Ueber die Anordnung der elastischen Fasern (arrangement of elastic fibers) im Uterus. L. Pick.
- 61 Influence of Section of Nerves on the Thyroid Gland. J. Katzenstein.—Zur Frage der Wirkung der Nervendurchschneidung auf die Schilddrüse.
- 62 (No. 2.) Ueber congenitale Muskel-Defecte. R. Bing.
- 63 Beitrag zur Kenntniss der Organ-Veränderungen (alterations) nach Schilddrüsen- (thyroid gland) Exstirpation bei Kaninchen (in rabbits). W. Bensen. Experimental Research.
- 64 *Hemorrhages in Suprarenals. M. Simmonds.—Ueber Nebennierenblutungen.
- 65 Beitrag zur Casuistik der Mesaortitis gummosa. L. Heine.—Three cases.
- 66 Cause of Action of Diluted and Concentrated Air on the Animal Organism. E. Aron.—Zur Ursache der Einwirkung verdichteter und verdünnter Luft auf den Thierkörper.
- 67 Ueber Chemismus und Technik der Weigert'schen Elastin-Färbung (stain). B. Fischer.
- 68 Die Geminatität (twin bearing) in ihren erblichen Beziehungen (in relation to heredity). H. Naegeli-Akerblom. Statistical.
- 69 Das Aufsägen des Schädels ohne Verletzung (sawing skull without injury of) der Dura mater. G. C. Van Walsem.
- 70 (No. 3.) Störungen (disturbances) der Regeneration von Nieren- (of kidney) Epithelien. R. Rössli.
- 71 *Zur Histologie und Klinik der Neuro-Fibrom nebst Bemerkungen über das Verhalten (remarks on behavior) der Patella-Reflexe bei Querschnitt- (cross-cut) Läsionen des Rückenmarkes im unteren Brustmark (in lower dorsal spinal cord portion). J. Sörgo.
- 72 Ueber die Pachionischen Granulationen und ihr Verhältniss (their relation) zu den Sarcomen und Psammomen der Dura Mater. M. B. Schmidt.
- 73 Ueber Knochen- (bone) tumors mit Schilddrüsenbau (structure of thyroid gland). E. Gierke.—One case.—No primary tumor in the thyroid.

- 74 Ueber den physiologischen Iodgehalt (iodin contained in) der Zelle. J. Justus.
- 75 Weitere Beiträge zur Frage der Schaum- (foam) Organe und der Gangrène foudroyante. Cadavérose Fett-Embolie der Lungen-Capillaren. M. Westenhoefer. (Cadaver of parturient woman.)

49. Idiopathic Congestion of Liver.—Penkert describes the case of a 2-year-old boy in whom the hepatic veins were obliterated, evidently from some congenital anomaly, and resulting in intense congestion of the liver. He could find only one similar case in the literature.

55. Generation of Fever Temperature.—Aronsohn describes researches which apparently establish that the higher temperature in both natural and artificially-produced fever is produced by the muscle tissue. The blood does not seem to be directly involved in it, and it is still undetermined whether the glands are concerned.

64. Hemorrhages in the Suprarenals.—Simmonds is professor at Hamburg and has frequently discovered evidences of minute ecchymoses in the suprarenals in various infectious diseases. He regards them as of toxic origin. He has observed cases in which hemorrhagic infarction of both suprarenals proved fatal with the clinical picture of peritonitis and collapse. Hemorrhage in the suprarenals may be due to a hemorrhagic diathesis, to thrombosis of the veins or bacterial embolism of the capillaries or to trauma. Those noted in the newly-born belong in this last group. The thrombosis occurs generally only in chronically debilitated people, and is not due to an inflammatory process. Bacterial embolism may be discovered in subjects free from either clinical or anatomic signs of a septic infection. He has encountered twelve cases of fatal hemorrhage in these organs. When the hemorrhage is unilateral the prognosis may be favorable but not when both are involved.

71. Neurofibroma.—Sorgo relates the particulars of a case observed at von Schrötter's clinic. The neurofibroma originates in the peripheral neurilemma of single nerve fibers. The medullary sheath is first involved and later the axis cylinder. The fibers not involved in the neoplasm are liable to become atrophied from compression, but until this occurs the lesion may develop without causing symptoms. Cross section of the dorsal portion of the cord increases the knee jerks on account of the irritation spreading to the reflex centers in the lumbar cord from the pathologic focus. The cells of Clarke's column are less resistant to morbid processes than the large motor cells of the anterior horns. Neurofibromatosis may be a partial sign of a general disposition to pathologic alterations on the part of the connective tissue over large areas of the body, shown in a tendency to neogrowths, interstitial nephritis, glioma, vascular affections, etc. Even in case of absence of compression of the spine, there may be local edema of the skin and local pain on pressure of the spine, but neither are pathognomonic.

Beiträge z. Path. Anat. und z. Allg. Path. (Ziegler's), Jena.

- 76 (XXXIII, 1-2.) Is There a Primary Affection of the Epithelium Tending to Tumor Formation? G. Hauser.—Gibt es eine primäre zur Geschwulstbildung führende Epithelerkrankungen?
- 77 Zur Kritik der Tuberculose-Frage. M. Schottellus.
- 78 Ueber Amiotose und Mitose. R. Klemensiewicz.
- 79 Zur Kenntniss der ependymären Glome des IV Ventrikels. A. Linn.
- 80 Ueber färberische Differenzen zwischen den Mastzellengranulationen und den Haemamoeba leucemia magna. M. Löwit.
- 81 Weitere Beiträge zur Pathogenese des Icterus. H. Eppinger.
- 82 Zur normalen und path. Histologie der Glandula thyroidea, parathyroidea und Hypophysis. J. Erdheim.
- 83 Ueber trübe Schwellung (cloudy swelling). K. Landsteiner.
- 84 Beitrag zur Pathologie des Balantidium coli. W. Klimenko.
- 85 Normale und path. Histologie der Gallen-Capillaren. Beitrag zur Lehre vom Icterus und der biliären Cirrhose. N. Jagic.
- 86 Untersuchungen über Polyarthrits chronica adhesiva. M. Kachel.

Berliner Klin. Wochenschrift, Berlin.

- 87 (XL, 7.) Zur Frage der Abhärtung (question of toughening children). W. Krebs.
- 88 Die acute Entzündung (inflammation) der Flexura sigmoidea durch Kothstauung (proctostasis). A. Bittorf.
- 89 Weitere Beiträge zur Lehre von dem Darmfäulniss (putrefaction in intestines). A. Albu.
- 90 (No. 8.) Ueber Weissmast (albumin fattening). M. Kaufmann und L. Mohr.
- 91 Beitrag zu dem Studium der Rinder- und menschlichen (bovine and human) Tuberculose. A. Cipollina.

- 92 Das Adeno-Carcinom der Nase (of nose). H. Cordes.
- 93 Die Beförderung der Reaction nach kalten Wasser-proceduren. S. Baruch.
- 94 Ueber Fütterungs- (feeding) Tuberculose. D. von Hanse-mann. (Commenced in No. 7.)
- 95 Thoughts on the Neuron Question. H. Haenel.—Gedanken zur Neuronfrage.

90. Albumin Fattening.—The maximum daily amounts ingested in the two cases studied at von Noorden's clinic were 1,800 c.c. of milk; 800 c.c. of cream; 225 gm. of roast beef; 150 gm. rolls; 250 gm. butter and 40 gm. plasmon. One woman gained on this diet in twenty-three days 4.8 kgm., that is, about 10.5 lbs. The other gained in eight days nearly 3 lbs. The details of the metabolism accessible to clinical tests were carefully noted and are given in tabulated form, especially the retention of the calcium salts.

91. Transmissibility of Human and Bovine Tuberculosis.—Cipollina reports that a monkey fed with bovine tubercle bacilli cultures contracted tuberculosis with no primary lesions apparent in the gastrointestinal tract. On the other hand inoculation of a calf with human bacilli resulted negatively. Although these tests are so limited yet he thinks that they suggest that Koch's assertions in regard to bovine and human tuberculosis have led to researches which have established that the bovine bacillus is more virulent for both man and animals than the human tubercle bacillus.

92. Adenocarcinoma on the Nose.—The patient was an elderly woman and was cured by electrolysis with no recurrence to date.

Centralblatt f. Bakteriologie, Jena.

- 96 (XXXIII, 1.) Die Wachsthum und Dauerformen (growth and permanent forms) der Strahlenpilze (Aktinomyeten), und ihre Beziehungen (and their relations) zu den Bakterien. E. Levy.
- 97 Zur Frage der morph. und biol. Charakterisierung des Meningococcus intracellularis. H. Jaeger.
- 98 Ueber einen neuen Stall- (cage) Infektionen verursachenden Mikroorganismus. Schwer (Pösen).
- 99 Die Bakterien-Flora der gesunden und kranken Nasenschleimhaut (nasal mucosa). W. Hasslauer.
- 100 The Etiology of the Summer Diarrheas of Infants. C. W. Duval and V. H. Basset.
- 101 Zur Kenntniss des Genus Wageneria Monticello und anderer Cestoden. L. Cohn.
- 102 Untersuchungen über die Wirksamkeit des Milzbrandserums des Hundes (efficacy of dog anti-anthrax serum) als Schutz- und Heilmittel. F. Sanfelice (Cagliari).
- 103 Notiz zur Immunität der Schnecken (of snails) gegen Impfmilzbrand (against inoculation of anthrax). A. Lode.
- 104 Ueber die bacterielle Wirkung einiger Riechstoffe (of certain aromatics). H. Marx.
- 105 Ueber der vererbten (inherited) und intrauterinen Uebergang (transmission) der agglutinierenden Eigenschaften (properties) des Blutes (of blood) und die Bildung der Agglutinine im Körper der Embryonen. W. Jurewitsch.
- 106 (No. 2.) Untersuchungen über Sarcina, Streptococcus und Spirillen. D. Ellis. (Commenced in No. 1.)
- 107 Studien über Wasser-Bakterien des Leitungswassers der Stadt (flora of water supply) Buenos Ayres mit bes. Berücksichtigung der Pigment-Bakterien. D. Fernandez. (Commenced in No. 1.)
- 108 Bakt. Befund im Elter eines gashaltigen Abscesses (bacterial findings in pus of gas-forming abscess). A. Rodella.
- 109 Meerschweinchen- (guinea-pigs) Epizootie durch eine Varietät des Coll-Bacillus verursachte. K. Kovarszik.
- 110 Ueber Pebrine und verwandte Mikrosporidien. A. Lutz and A. Splendore (S. Paulo, Brazil).
- 111 Ueber Lebensfähigkeit (vitality) von Bakterien in Oel. O. Kurpjuweit.

102. Antianthrax Serum from Dogs.—The serum from immunized dogs proved able to protect rabbits against subcutaneous injection of virulent anthrax spores ten to forty days afterward. One patient with anthrax also recovered after a total amount of 56 c.c. of the serum had been injected.

104. Bactericidal Efficacy of Aromatic Substances.—Marx believes that the ethereal oils liberate oxygen from the air, to which they owe their undoubted bactericidal action.

Centralblatt f. Chirurgie, Leipsic.

- 112 (XXX, 5.) Zur Behandlung der Frakturen. Borchard.
- 113 Zur operativen Behandlung der veralteten Patellar-Frakturen. M. Sträter.
- 114 (No. 6.) Zur Frage der Sauerstoff- (oxygen) Chloroform-Narkose. C. Lauenstein.
- 115 Zur Technik der "Sonderung ohne Ende" (endless sounding) bei Speiseröhrenverengungen (strictures in esophagus). Von Hacker.
- 116 (No. 7.) Zur Prophylaxis bei der Chloroform-Narkose. L. Feilchenfeld.
- 117 Instrument zur Compression der Aorta bei gewissen Bauch- und Becken- (abdominal and pelvic) Operationen. K. Dahlgren.

140. Gelatin as a Hemostatic for Children.—Zuppingier witnessed the death of a girl of 8 with hemorrhagic purpura whose nose had been tamponed to arrest uncontrollable bleeding. The hemorrhage was apparently arrested, but the child died suddenly soon afterward, and the air passages were found full of accumulated blood. Since that time he has made a practice of subcutaneous injection of a 2 to 5 per cent. solution of gelatin in all hemorrhagic affections in children, and has found it invariably successful in controlling the bleeding. He has sometimes used a 10 per cent. solution. Höltschmied has reported that he saved the lives of five infants with melena neonatorum by injection of 15 c.c. of a 2 per cent. solution. In three the effect was immediate; the others required one or two more injections. Others have published similarly favorable results in this formerly hopeless affection. A few drops of a concentrated solution applied to the bleeding point in cases of hemorrhage in the throat, etc., have instantaneously arrested it in many cases.

142. Rupture of Stomach Mucosa.—The rupture occurred in a football game; the young man running at full speed was hit in the pit of the stomach by the elbow of one of his opponents. He was able, after a time, to continue playing. Two or three days later he noticed a sharp intermittent pain at the right costal arch, which was aggravated by eating and drinking. The eleventh day, after drinking a large quantity of beer, there was vomiting and sharper pain, and a few days later, after a copious meal, sudden oppression, vertigo, cold perspiration, vomiting of blood and melanic stools. The laparotomy disclosed that the serosa was intact, but a laceration 8 cm. in length was found in the mucosa. The patient made a good recovery after the rupture had been sutured. It is probable that such lacerations from contusion of the stomach region are common, but usually heal spontaneously or present the clinical picture of an ulcer later. This case would probably have run this course if it had not been for the immoderate beer and wine drinking. It suggests the necessity for complete abstinence in cases of gastric disturbances after contusion of the stomach region. The sharp, persistent pain at the costal arch may serve to differentiate the injury.

143. Strictures of Esophagus.—Moorhof has been able to close the stomach fistula without a laparotomy in cases of stricture from action of caustics. He incises around the fistula and down to within .5 cm. of its orifice in the mucosa. When the fistula canal thus stands up alone and detached— injury being prevented by a sound inserted in it—he then pushes the entire canal in, turning it wrong side out and suturing the outer orifice and then the abdominal walls above it. By this means the opening of the fistula can heal without interference from the gastric juice. He has treated fistulas into the bladder in the same way with complete success. In one case he describes, all the urine was voided through the large fistula, but after treatment in this way not a drop of urine oozed through. It is necessary to carry the incision a little above and below the circular one. In his experience the Billroth conical bougie has frequently passed a stricture in the esophagus, impervious to all other instruments. These bougies are filled with quicksilver and act by the constant pressure of their weight. He gives the particulars of five cases of nearly impermeable stricture, which he cured by these measures.

147. Paraffin Prothesis.—This communication from Gersuny's service describes the experience of the inventor of this procedure. He states that the prothesis has not altered in size in cases treated three years ago.

149. Phleboliths in Genital Organs.—In the case described a iipara of 40 applied for relief from uterine hemorrhage. In the veins around the cervix and along the upper portion of the vagina were found a number of concretions, small balls of calcium phosphate and carbonate. The ovarian and other veins were apparently intact. The uterus was the seat of a hemorrhagic endometritis, but, as it was impossible to remove all the phleboliths that could be palpated, the prognosis is not favorable.

150. Leucocyte Count in Gynecologic Affections.—Weiss proclaims from Chrobak's clinic that a negative leucocyte count in the early phases of a gynecologic affection entirely excludes the assumption of a suppurative process. Constant leucocytosis of 16,000 and over points to such a process, but this leucocytosis gradually declines as the affection progresses. It is still high enough, however, by the time the patient seeks a physician to indicate its character.

153. Pathology and Therapy of Asthma.—Sihle contributes a long article, in which he seeks to establish that asthma is a neurosis in the respiratory and circulatory domains. There are four elements, hypertonicity of the unstriated muscles of the air passages, hypotonicity in the vascular system, including the heart, a bronchial secretion of nervous origin, and a congestion of the entire mucous lining of the air passages. These four elements can be brought into play by the action of the peripheral nervous system, by irritants circulating in the blood, or by the action of the cortex, that is, the asthma may be peripherogenic, hematogenic or psychogenic. He cites some interesting examples of the benefit that may be derived from treatment along these lines, with therapeutic suggestion as the leading motif, and each element in the symptom-complex receiving its due consideration.

156. Acute Atrophy of the Bones.—Kienböck is an x-ray expert and has been making a special study of the changes in the bones revealed by the x-ray from four to eight weeks after some injury or inflammation of the extremities, especially those developing with much pain or requiring immobilization, fractures, osteomyelitis, joint tuberculosis, contusions or phlegmons of the soft parts. The bone casts a lighter shadow than normal, especially the spongiosa nearest the focus, or the lighter portions may occur in patches. The calcium salts are absorbed and the bone becomes pathologically altered in time. The condition may, likewise, be induced by injuries or affections of the central or spinal nervous systems. Before the discovery of the x-rays it was impossible to diagnose it until in an irreparable state, as the early stages cause little if any symptoms. Treatment must be mainly prophylactic. When this tendency to pathologic softening of the adjacent spongiosa is recognized and its dangers realized, the physician will aim to cure the underlying affection as rapidly as possible. If the x-rays show that the softening of the bone has already commenced, especially if in a joint, it must be exercised and massage applied, regardless of the pain it may induce, with Faradization, baths and, possibly, therapeutic passive congestion. In orthopedic treatment of the later ankylosis, luxations, etc., the fragility of the atrophied bone must be borne in mind.

Sei-I-Kwai, Tokyo, Japan.

- 161 (XXII, 1.) The Impregnated and the Unimpregnated Ova of *Ascarides*. K. Miura and N. Nishibuchi.
162 On the Weight of the Encephalon of the Japanese. K. Taguchi.

British Medical Journal, London.

March 7.

- 163 *Some Misconceptions with Regard to Diseases of the Liver. W. Hale White.
164 *Adenoma and Adeno-carcinoma of the Rectum. Charles B. Ball.
165 The Conditions Which Modify the Characters of Inflammations of the Skin, and Their Influence on Treatment. H. Radcliffe Crocker.
166 Case of Apparent Secondary Abdominal Pregnancy in a Rabbit After Primary Rupture of the Uterus. Kurt Kamann.
167 Case of Rheumatic Fever Complicated by Chorea, Iritis and Endocarditis—Recovery. Fred. C. Forster.
168 Bright's Disease; Anuria; Intestinal Hemorrhage; Death. Lyster Cole-Baker.
169 Diabetic Coma Treated by Transfusion. David Young.

163. Diseases of the Liver.—The misconceptions alluded to by White are, first, the common belief that alcoholic excesses are solely the cause of hepatic cirrhosis, while, in reality, some other cause must also be at work to produce the symptom. Nevertheless, the common type of hobnail liver is almost invariably the result of alcoholic drinking. He points out the characteristics of syphilitic cirrhosis, which, however, is so rare that it will be of little clinical importance. Malaria, which is given as the cause of cirrhosis, is, in his opinion, largely imaginary. We have really no obvious cause, except alcoholic drinks, for the usual type and while it is

experimentally true that obstruction of the bile duct will cause cirrhosis, it is rarely clinically, if not almost unknown, notwithstanding the frequent cases of pressure on the duct by cancers, growths, etc. Another misconception is in the attempt to draw a sharp distinction between atrophic and hypertrophic cirrhosis. In considering these, we must exclude Hanot's cirrhosis, which is a separate disease, occurring almost exclusively in children. White holds that there is really no distinction between atrophic and hypertrophic liver, but that the former is an earlier stage of the latter. The presence of ascites in atrophic liver is only natural, seeing that it occurs in the late stages of the disease. He notices the symptoms; ascites, a very serious one; jaundice, which may occur early; swelling of the feet; anemia; hemorrhages, etc. The disease we call alcoholic cirrhosis, which is so frequently associated with the consumption of alcohol, though some other factor is also present, is not a local disease, any more than granular disease of the kidney is a local condition of that organ. He insists on the importance of ascites in the prognosis. If a patient in an uncomplicated case has ascites, he is very near the end. He also notes the occurrence of perihepatitis, the zuckerguss liver of the Germans and remarks on certain symptoms of primary malignant disease, which he thinks occurs in a certain proportion of cases. He takes a midway position between those who hold that malignant disease is very rare and those who, like Friedreichs, claim that it occurs in one-third of all cases. He had in his necropsies about one case of primary malignant disease of the liver to every twenty-four, where it was secondary.

164. **Adeno-Carcinoma of the Rectum.**—Ball's lecture gives the details of operative treatment, perineal excision, the Kraske operation, the abdominal method, etc.

The Lancet, London.

March 7.

- 170 The Nature and Anatomy of Enteroptosis (Glenard's Disease). Arthur Keith.
- 171 *The Conditions Which Modify the Characters of Inflammations of the Skin, and Their Influence on Treatment. H. Radcliffe Crocker.
- 172 The Rise of Blood Pressure in Later Life. T. Clifford Allbutt.
- 173 Report on the Influence of Sanitation in Checking Enteric Fever and Dysentery at Harrismith, Orange River Colony, South Africa, in the Years 1901 and 1902. R. M. Le Hunte Cooper.
- 174 A Case of Acute Tetanus with Certain Points of Interest. L. Dimock Saunders.

171. **Skin Inflammations.**—Crocker's second lecture treats first of microbic infection and the conditions which favor it. He also notices the importance of the absorption of intestinal toxins in the production of skin diseases and the part played by the nervous system, especially in special vasomotor areas. Pregnancy is responsible for a few eruptions, the most notable one being herpes gestationis. The influence of season is also mentioned, as in summer and winter prurigo, also the effects of ingesta and drugs. He remarks, in conclusion, in regard to gout as having a primary position as an etiologic modifying factor of dermatitis. While he does not doubt that gouty patients are predisposed to eczema and some other terms, there is no doubt that its influence has been much overrated by the profession.

The Practitioner, London.

March.

- 175 *On the Mode of Production of Fractures of the Lower Extremity by Indirect Violence. W. Arbuthnot Lane.
- 176 *Examination of the Blood: With Examples of the Wide Range of Its Value. Herbert French.
- 177 *Lorenz's Method of Treating Congenital Dislocation of the Hip. J. Jackson Clarke.
- 178 Experiences of an Epidemic of Cerebrospinal Meningitis. R. Travers Smith.
- 179 *A Note on Gastric Tetany. B. G. A. Moynihan.
- 180 The Use and Abuse of High-Frequency Electricity in Medicine. H. Lewis Jones.
- 181 The Phenomena of Tidal Percussion at the Apices of the Lungs, and Their Interpretation—A Reply to Dr. Philip. E. H. Colbeck.
- 182 Diseases of the Liver—A Review of Some Recent Work. H. D. Rolleston.
- 183 Cerebral and Mental Diseases in Relation to General Medicine—A Review of Recent Work. H. Campbell Thomson.
- 184 The Prevention of Measles. George Newman.
- 185 The Imperial Vaccination League. Edward J. Edwardeas.

175. **Fractures of the Lower Extremity.**—Lane criticises the anatomic works, with their various descriptions of the

mechanism of the joints of the lower extremity, remarking that the lateral movement of the ankle joint is not extensive. It is a fairly perfect hinge joint. The surgical anatomy, he thinks, is even worse in the text-books. The only method of treating, for instance, in Pott's fracture with displacement, owing to the mechanism of the injury, is by pinning together of the broken parts. Fracture of the tibia and fibula produced by indirect violence is almost always spiral and requires similar treatment, holding the parts in position by wires or screws. The spiral fracture of the femur is brought about in a similar way. He says it is a pity that anatomists, when writing text-books for students, do not confine themselves to improving on the existing, generally inaccurate, descriptions of the mechanics and functions of the skeleton, instead of attempting, under the title of surgical anatomy, to confuse the student by statements and illustrations which are usually extraordinarily incorrect.

176. **Blood Examination.**—The importance of blood examination is emphasized by French and the methods described, with illustrative cases of the value of the leucocyte count, hemoglobin estimates, red corpuscle counts, etc. Specific gravity is also of some importance, and he describes the method of testing it by a mixture of chloroform and benzene of the specific gravity of the normal blood. A drop of blood put into this will float or sink as its specific gravity varies from the normal and by putting more chloroform or benzene into the test tube, to bring it to exact equilibrium, the figures as read off on the urinometer will determine its specific gravity. He details the blood examination as follows:

The ear is pricked. 1. Blood films are made and dropped into absolute alcohol and ether. 2. Blood is drawn up into the red-corpuscle pipette to the mark of 0.5, diluted to the mark 101 with Hayem's fluid, quickly mixed, and put aside to count presently. 3. The same is done with blood in the white corpuscle pipette. 4. Blood is drawn up to the mark on the hemoglobinometer pipette, expelled into a little distilled water in the graduated tube, and thus laked. 5. Then another drop is taken in the same pipette and put into the mixture of benzene and chloroform. The pipette should then be cleaned. This is quickly done by drawing distilled water up into it two or three times, blowing it out again each time; then in the same way, drawing up absolute alcohol twice successively, to dehydrate the tube, and, finally, ether in the same way, to remove the alcohol and to leave the tube dry and clean when the ether evaporates, as it does in a few minutes. The determination of the specific gravity may then be completed, and the chloroform and benzene returned to a stoppered bottle for future use; the blood drops are readily filtered out by pouring it through muslin. The hemoglobin estimation may then be continued and completed. Finally, after further complete mixing in the pipettes before samples are taken, the red and white corpuscles are successively enumerated under the microscope. The films wait until next day, and then require but ten minutes for their staining and mounting.

The complete blood examination, without a differential leucocyte count, need not occupy more than three-quarters of an hour; a differential count will take a little longer.

177. **The Lorenz Method in Congenital Hip Dislocation.**—Clarke reviews Lorenz's manipulations, and sums up as follows:

Lorenz's method of treating congenital dislocation of the hip is based on correct anatomic and physiologic grounds; it is the outcome of an exceptional experience, both of open and subcutaneous operating; in a considerable proportion of cases it gives a perfect anatomic and physiologic result (i. e., it cures a condition hitherto deemed incurable); in a still greater number of cases it affords a permanent functional improvement that relieves the patient of the grievous disabilities which the deformity usually entails if left untreated. In the remaining cases, in which the method fails to give a firm articulation placed anteriorly, the manipulative operation of Lorenz is a necessary preliminary to any subsequent treatment by open operation that may be undertaken. The manipulative operation is free from danger, save when treatment has been too long delayed.

179. **Gastric Tetany.**—Moynihan reports a case with recovery, though the patient afterwards died of pneumonia. The point which he emphasizes is that gastric tetany is not the rare or serious disease which has been described by Frankl Hochwart and others. Of the five cases which he has observed, all were due to simple diseases; gastroenterostomy was performed in all, and all recovered.

Journal of Tropical Medicine, London.

March 2.

- 186 Oriental Sore with Specific Orchitis. Dr. Manson.
- 187 The Antisepsis of Major Eye Operations, as Practiced by Some of the Leading Ophthalmologists of Europe. (To be continued.) R. H. Elliot.
- 188 Cases Illustrative of Elephantiasis. W. Renner.
- 189 Notes on a Case of Alnham in South Africa. John Muir.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Assisted by H. R. M. Landis, M.D., Assistant Physician to the Out-Patient Medical Department of the Jefferson Medical College Hospital. Volume I. March, 1903. Surgery of the Head, Neck and Chest—Infectious Diseases, Including Acute Rheumatism, Croupous Pneumonia, and Influenza—Diseases of Children—Pathology—Laryngology and Rhinology—Otolaryngology. Cloth. Pp. 450. Price, \$2.50. Philadelphia and New York: Lea Brothers & Co. 1903.

THE DISEASES OF WARM COUNTRIES. A Handbook for Medical Men. By Dr. B. Scheube, State Physician and Sanitary Adviser, Greiz. Translated from the German by Pauline Falcke, with Addenda on Yellow Fever, by James Cantile, M.B., F.R.C.S.; and on Malaria, by C. W. Daniels, M.B., M.R.C.S. Edited by James Cantile, M.A., M.B., F.R.C.S., D.P.H., Lecturer at the London School of Tropical Medicine. With All the Original Colored Maps, Charts, Illustrations, Etc., Together with Many Additional Plates, from the *Journal of Tropical Medicine*, Second Edition, Revised. Cloth. Pp. 594. Price, \$8.00 net. Philadelphia: P. Blakiston's Son & Co. 1903.

CLINICAL TREATISES ON THE PATHOLOGY AND THERAPY OF DISORDERS OF METABOLISM AND NUTRITION. By Prof. Dr. Carl von Noorden, Physician-in-Chief to the City Hospital, Frankfurt a. M. Authorized American Edition, Translated Under the Direction of Boardman Reed, M.D., Professor of Diseases of the Gastrointestinal Tract, Hygiene, and Climatology, Department of Medicine, Temple College. Part III. Membranous Catarrh of the Intestines (Colica Mucosa). By Prof. Dr. Carl von Noorden, with the Collaboration of Dr. Carl Dapper. Cloth. Pp. 64. Price, \$0.50. New York: Treat & Co. 1903.

MYCOLOGY OF THE MOUTH. A Text-Book of Oral Bacteriology. By Weldon Goadby, D.P.H. Camb., L.R.C.P., M.R.C.S., B.S. Eng., Bacteriologist and Lecturer on Bacteriology, National Dental Hospital. With Illustrations. Cloth. Pp. 241. Price, \$3.00 net. London, New York, Bombay: Longmans, Green & Co. 1903.

PROCEEDINGS OF THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION. At the Fifty-eighth Annual Meeting, Held in Montreal, Que., June 17-20, 1902. Cloth. Pp. 333. Published by American Medico-Psychological Association. 1902.

BACTERIA IN DAILY LIFE. By Mrs. Percy Frankland, Fellow of the Royal Microscopical Society. Cloth. Pp. 216. Price, \$1.75 net. London, New York and Bombay: Longmans, Green & Co. 1903.

MEDICO-CHIRURGICAL TRANSACTIONS. Published by the Royal Medical and Chirurgical Society of London. Volume XXXV. Cloth. Pp. 369. London: Longmans, Green & Co. 1902.

SIXTH ANNUAL REPORT OF THE EPISCOPAL EYE, EAR AND THROAT HOSPITAL, Washington, D. C., 1902. Paper. Pp. 54.

REPORT OF THE TRUSTEES OF THE NEWBERRY LIBRARY, for the Year 1902. Paper. Pp. 28. Chicago. 1903.

The Public Service.

Navy Changes.

Changes in the Medical Corps of the Navy, for the week ending March 14, 1903:

Surgeon G. P. Lumsden, detached from the *Hancock* and ordered home to wait orders.

Medical Director J. R. Waggener, commissioned medical director from Jan. 20, 1903.

P. A. Surgeons H. H. Haas and W. H. Bucher, commissioned passed assistant-surgeons from Jan. 10, 1903.

P. A. Surgeons E. O. Huntington, J. B. Dennis and E. Thompson, commissioned passed assistant-surgeons from Feb. 10, 1903.

Asst.-Surgeon B. H. Dorsey, appointed asst.-surgeon March 2, 1903.

Pharmacist I. N. Hurd, detached from the Navy Yard, Portsmouth, N. H., and ordered to Washington, D. C., for examination for retirement, and thence home to wait orders.

Surgeon E. S. Bogert, Jr., detached from the Naval Recruiting Station, Buffalo, N. Y., and ordered home to wait orders.

A. A. Surgeon P. F. McMurdo, ordered to the *Gloucester*.

P. A. Surgeon W. P. Grove, detached from duty with Marine Detachment, Culebra, P. R., and ordered to Naval Hospital, New York, for treatment.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended March 12, 1903:

P. A. Surgeon A. R. Thomas, granted leave of absence for two months from February 25.

Asst.-Surgeon J. W. Kerr, leave of absence granted by Department letter of Sept. 20, 1902, amended so that said leave shall be for one month and fifteen days.

Asst.-Surgeon A. D. Foster, on the return of medical officer in command, relieved from duty at Wilmington, N. C., and directed to command, relieved from duty at Charleston, S. C., and assume command of the service, proceed to Charleston, S. C., and assume command of the service, relieving A. A. Surgeon F. F. Sams.

A. A. Surgeon L. C. Bean, granted leave of absence for two days.

A. A. Surgeon B. W. Goldsborough, granted leave of absence for one day.

A. A. Surgeon W. E. Patrie, granted leave of absence for fourteen days from February 27.

A. A. Surgeon J. C. Rodman, granted leave of absence for three days.

Pharmacist J. Achenbach, relieved from duty at Port Townsend Quarantine, Wash., and directed to proceed to Port Townsend, Wash., and report to medical officer in command for duty and assignment to quarters, relieving Pharmacist R. F. Troxler.

Pharmacist E. J. Thurston, to proceed to Gulf Quarantine and report to medical officer in command for duty.

Pharmacist C. H. Woods, granted leave of absence for twenty days from March 21.

Pharmacist H. E. Davis, relieved from duty at Louisville, Ky., and directed to proceed to Memphis, Tenn., and report to medical officer in command for duty and assignment to quarters, relieving Pharmacist E. M. Holt.

Pharmacist R. F. Troxler, on being relieved from duty at Port Townsend, Wash., to proceed to Port Townsend Quarantine and report to medical officer in command for duty.

Pharmacist E. M. Holt, on being relieved from duty at Memphis, Tenn., directed to proceed to Louisville, Ky., and report to medical officer in command for duty and assignment to quarters.

PROMOTION.

Asst.-Surgeon H. B. Parker, commissioned as passed asst.-surgeon, to rank as such from March 3, 1903.

RESIGNATION.

P. A. Surgeon A. R. Thomas, resigned, to take effect April 25, 1903.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 14, 1903:

SMALLPOX—UNITED STATES.

Alabama: Mobile, Feb. 28-March 7, 11 cases.
California: Fresno, Feb. 1-28, 23 cases; Los Angeles, Feb. 22-28, 4 cases; Sacramento, Feb. 22-28, 3 cases; San Francisco, Feb. 22-March 1, 8 cases.
Colorado: Denver, Feb. 22-28, 10 cases.
Florida: Jacksonville, Feb. 28-March 7, 3 cases.
Illinois: Feb. 28-March 7, Alton, 1 case; Chicago, 12 cases, 4 deaths.
Indiana: Elwood, March 1-8, 6 cases; Evansville, Feb. 28-March 7, 5 cases; Indianapolis, Feb. 28-March 7, 19 cases, 8 deaths.
Iowa: Davenport, Feb. 28-March 7, 1 case.
Kansas: Wichita, Feb. 28-March 7, 2 cases.
Kentucky: Lexington, Feb. 28-March 7, 1 case; Newport, March 1-8, 1 case.
Louisiana: New Orleans, Feb. 28-March 7, 3 cases.
Massachusetts: Feb. 28-March 7, Fall River, 2 cases; New Bedford, 1 case.
Michigan: Feb. 28-March 7, Ann Arbor, 1 case; Marquette, 1 case; Port Huron, 5 cases.
Missouri: St. Louis, March 1-8, 5 cases.
Nebraska: Omaha, Feb. 28-March 7, 2 cases.
New Jersey: Jersey City, March 1-8, 1 case; Newark, Feb. 28-March 7, 3 cases.
New York: Buffalo, Feb. 28-March 7, 1 case, 1 death.
Ohio: Cincinnati, Feb. 27-March 6, 6 cases, 1 death; Cleveland, Feb. 28-March 7, 2 deaths; Dayton, Feb. 28-March 7, 5 cases; East Liverpool, Feb. 1-28, 2 cases.
Pennsylvania: Feb. 28-March 7, Erie, 3 cases; Johnstown, 1 case, 1 death; McKeesport, 1 case; Philadelphia, 17 cases, 4 deaths; Pittsburgh, 27 cases, 1 death.
South Carolina: Charleston, Feb. 28-March 7, 2 cases, 1 death.
Tennessee: Memphis, Feb. 28-March 7, 3 cases.
Utah: Salt Lake City, Feb. 23-March 7, 26 cases.
Wisconsin: Green Bay, March 1-8, 1 case; Milwaukee, Feb. 28-March 7, 6 cases.

SMALLPOX—FOREIGN.

Austria: Prague, Feb. 7-14, 6 cases.
Belgium: Antwerp, Feb. 7-14, 1 case; Liege, Jan. 31-Feb. 7, 1 case, 1 death.
Brazil: Rio de Janeiro, Jan. 17-Feb. 6, 14 deaths.
Canada: Hamilton, Feb. 28-March 7, 1 case; Winnipeg, Feb. 1-28, 2 cases.
Canary Islands: Las Palmas, Feb. 7-14, 32 cases.
Germany: Hamburg, Feb. 14-21, 1 case.
Great Britain: Birmingham, Feb. 14-21, 8 cases, 1 death; Dublin, Feb. 14-21, 2 cases; Leeds, Feb. 14-21, 9 cases, 2 deaths; Liverpool, to Feb. 21, 105 cases, 5 deaths; London, Feb. 14-21, 7 cases; Manchester, Feb. 7-21, 52 cases, 3 deaths; Sheffield, Feb. 7-21, 4 cases.
India: Bombay, Feb. 3-10, 53 deaths.
Mexico: City of Mexico, Feb. 15-22, 2 cases, 1 death.
Russia: Odessa, Feb. 7-11, 3 cases, 1 death; St. Petersburg, Feb. 7-14, 75 cases, 14 deaths; Warsaw, Feb. 19-26, 2 deaths.
Spain: Barcelona, Feb. 1-15, 4 deaths; Malaga, Jan. 1-31, 3 deaths; Valencia, Feb. 1-15, 3 deaths.
Straits Settlements: Singapore, Jan. 10-17, 4 deaths.
Switzerland: Zurich, Feb. 7-14, 1 case.

YELLOW FEVER.

Brazil: Rio de Janeiro, Jan. 16-Feb. 6, 75 deaths.
Mexico: Vera Cruz, Feb. 21-28, 3 cases, 3 deaths.

CHOLERA—FOREIGN.

India: Bombay, Feb. 3-10, 1 death; Calcutta, Jan. 31-Feb. 1 deaths.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, Jan. 16-Feb. 6, 4 deaths.
India: Bombay, Feb. 3-10, 649 deaths; Calcutta, Jan. 31-Feb. 142 deaths; Karachi, Feb. 1-8, 38 cases, 39 deaths.
Mexico: Mazatlan, Feb. 7-14, 41 cases, 20 deaths; to Mar.

PLAGUE—INSULAR.

Hawaii: Hilo, March 9, 1 death.

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Original Articles.

FRACTURES INTO AND ABOUT THE ELBOW JOINT.*

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SAN FRANCISCO.

Fractures involving the elbow joint, if not properly treated, will often result in impairment of function, amounting in some cases to complete ankylosis, and when we consider that even slight limitation of the movements of this joint may incapacitate an individual from following the trade of his choice, it behooves us to not neglect even apparently trivial injuries of this joint. Motion is limited by either a malposition of the fragments, the overproduction of callus or the interposition of bone fragments in the joint cavity.

The overproduction of callus is sometimes difficult to avoid; but unless the bone be comminuted we can maintain the proper relation of fragments by either nails, wire, staples or plates, and any piece of bone which finds its way into the joint cavity should be removed. Opening of the joint is fraught with much less danger, so far as the subsequent motion is concerned, than leaving the fragments in faulty positions or loose pieces of bone in the cavity.

Before discussing the diagnosis of elbow-joint injuries I will briefly recall the anatomy of these parts, because without this knowledge we are absolutely unable to correct intelligently any of the various injuries which might befall this joint.

The elbow is a hinge joint; the bones entering into its formation are the trochlear surface of the humerus, which is received into the greater sigmoid cavity of the ulna, and admits of the movements peculiar to this joint, viz., flexion and extension; while the lesser, or radial head, of the humerus articulates with the cup-shaped depression on the head of the radius; the circumference of the head of the radius articulates with the lesser sigmoid cavity of the ulna, allowing of the movements of pronation and supination. The articular surfaces are covered with a thin layer of cartilage and held together by means of a capsular ligament, which is thicker on the sides than in front or back. The joint is lined with a synovial membrane, which is attached to the inner surface of the capsular ligament and reflected on the articulating surfaces of the bones, lining the olecranon and coronoid fossæ, and being continuous with the synovial membrane lining the superior radio-ulnar articulation.

1. On each side of the lower end of the humerus is found a prominence, the external and internal condyle, the

* Read before the Alameda County Medical Association at the October meeting.

internal being much larger than the external, and therefore more liable to injury.

The articular surface of the humerus is divided by a ridge into two parts, the internal extending lower than the external and known as the trochlea articulating with the greater sigmoid cavity. The outer part is called the radial head or capitellum and articulates with the upper end of the radius. The fact that the trochlea projects below the capitellum produces what is known as the carrying angle of the elbow, so that when the arm hangs naturally with the palm forward there is an angle of ten degrees at the elbow, enabling one to carry a bucket and at the same time rest the elbow on the trunk. Above the trochlea in front is a depression, the coronoid fossa into which fits the coronoid process of the ulna, the

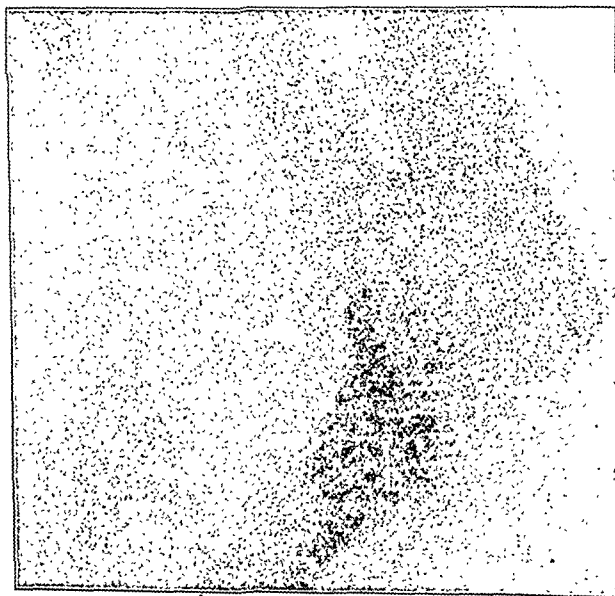


Fig. 1.—Before operation.

olecranon being received into the olecranon fossa just above the trochlea behind. The upper end of the ulna presents two processes and two cavities, the olecranon process is a thick curved piece of bone which is continuous with the posterior border of the ulna and gives attachment to the triceps muscle and the posterior portion of the capsular ligament of the joint; the coronoid process projects horizontally forward from the upper and front part of the ulna, giving attachment at its base to the brachialis anticus and the anterior portion of the capsular ligament. The greater sigmoid cavity is formed by the olecranon and coronoid processes, the lesser sigmoid cavity is a narrow depression in the outer side of the coronoid process which articulates with the side of the head of the radius. The upper extremity of the

radius is called the head and presents a shallow depression on top; the circumference of the head is round and smooth and rotates in the lesser sigmoid cavity, being held in place by the orbicular ligament.

A knowledge of the development of the ends of these bones is of great importance in the treatment of fractures in children, and the text-books give only a general idea

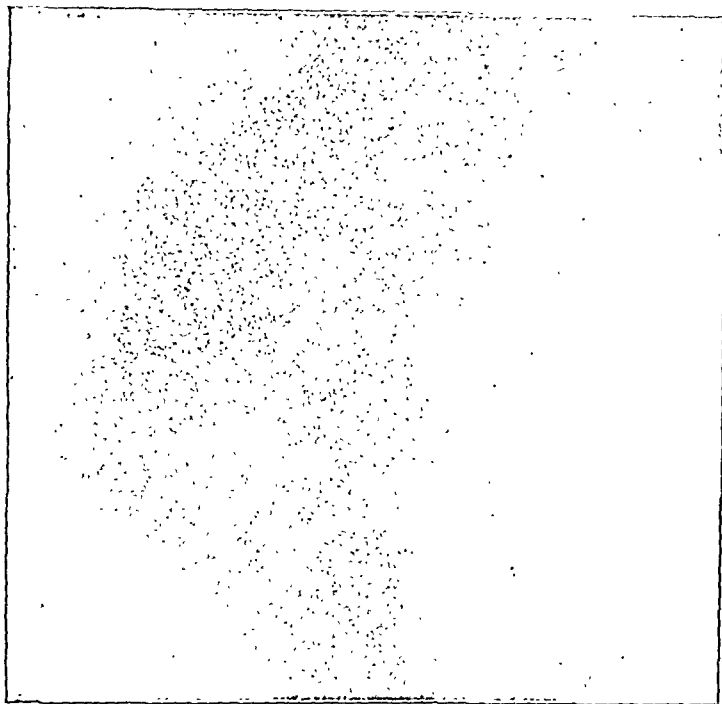


Fig. 2.—Before operation.

of the time and manner of development. I have taken a large number of skiagraphs of elbows of children, the ages varying from 1 to 15 years, and I find that the beginning of ossification in the various centers depends, not only on the age, but on the general development of the child. In some cases a center of ossification would

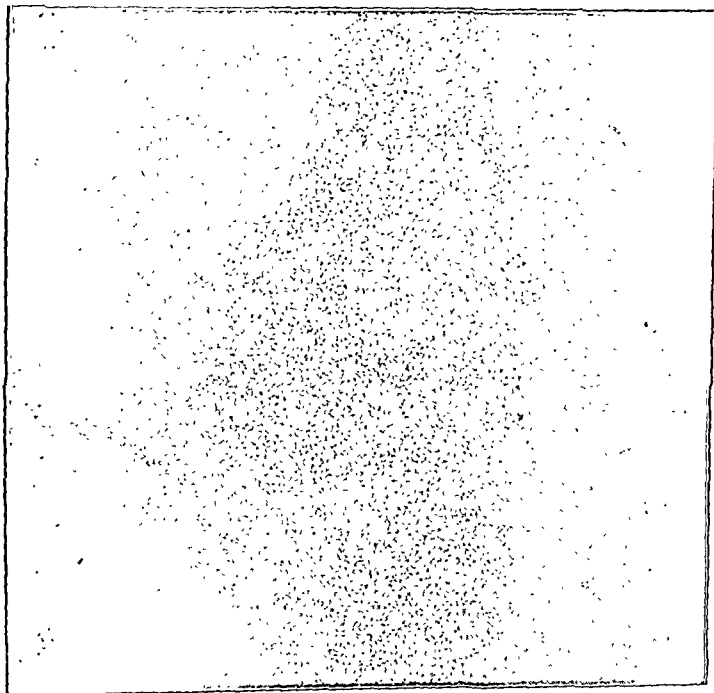


Fig. 3.—Two weeks after operation.

show three years in advance of the text-book time, and in others would be later. It was noticed, however, that, as a rule, the *x*-ray showed the ossific center at least one year sooner than the books would expect.

The diagnosis of fractures of the elbow joint can not be accurately made without the *x*-ray. I do not mean to be understood that the *x*-ray takes the place of palpa-

tion or that a correct diagnosis can be made by anyone by simply looking at a skiagraph of an injured joint; but I do say that, without one or more well-made skiagraphs taken in the proper planes, no surgeon can venture to make an accurate diagnosis of fractures involving the elbow joint.

In fractures of the shafts of long bones we often get functionally good results, even when the fragments have not been accurately adjusted, but in fractures involving the joints, and especially the elbow joint, we can not expect any such results, and we must see that all the broken parts are placed in their normal positions and retained there until union has taken place.

The following case is of interest on account of its rarity; I have not been able to find one recorded which was similar in character:

G. M., aged 16, was sent to me for examination three weeks after having received a fall on the elbow. The arm had been treated by means of a right-angled splint, which had been removed every few days and readjusted. At the end of three weeks the joint was found to be immovable, allowing neither extension nor flexion. Pronation and supination were almost

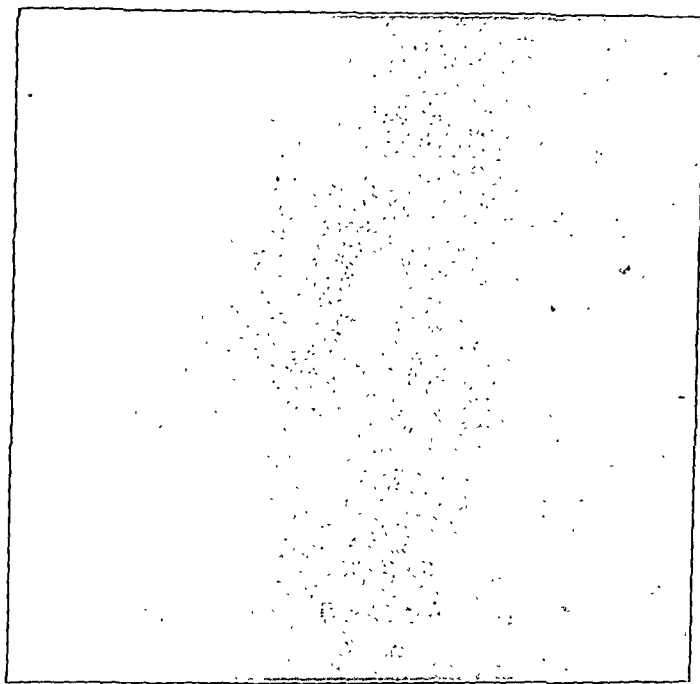


Fig. 4.—Nine weeks after operation.

normal. The carrying angle was very much increased, and the internal epicondyle was much flatter than that of the other arm. Slight crepitus was elicited while making pronation or supination. Two *x*-ray plates were taken at different angles, and showed that the internal epicondyle had been broken off and was lying between the trochlea and the greater sigmoid cavity, with the broken surface in contact with the cavity. The capitellum showed a small piece chipped off, but in proper position.

Operation was advised and accepted. An incision was made directly over the internal condyle down into the joint, and the epicondyle found exactly as shown by the *x*-ray. The flexor and pronator tendons were still attached to it, and their function had not been impaired. The internal lateral ligament had, of course, been torn through and the ulnar nerve was found surrounded by inflammatory tissue, and was dissected loose. The epicondyle was lifted from its position with great difficulty, first on account of the adhesions which had formed and also because it could not be tightly grasped without danger of crushing.

After its liberation it was found that the muscles had contracted to such an extent that it was impossible to bring the fragment to its original position, and it had to remain about one-fifth of an inch lower down than normal. While

in this position I drove two wire nails directly through the epicondyle into the condyle, being careful to avoid entering the olecranon or coronoid fossa. The lateral ligament was brought together with catgut, and the skin with silkworm gut, leaving the heads of the nails protruding.

The arm was put up in a straight splint and left for two weeks, after which one nail was taken out and passive motion begun; the other nail was removed one week later. There was considerable callus surrounding the humero-ulnar articulation, but under massage this is gradually diminishing and the patient is at present, nine weeks after the operation, able to move the joint without much pain, and can extend the forearm almost to a straight line and flex it to beyond a right angle. There is yet some callus to be absorbed, and we may expect that after another month or two the arm will be in almost perfect condition. The carrying angle is still too great, showing that there is some thickening of the synovial surfaces between the ulna and humerus. The small piece which was chipped off from the capitellum is causing very little, if any, disturbance, and appears to be united to the humerus in good position.

To obtain skiagraphs which will show accurately the injury to an elbow we place the arm with the two condyles of the humerus on the same plane as the plate,

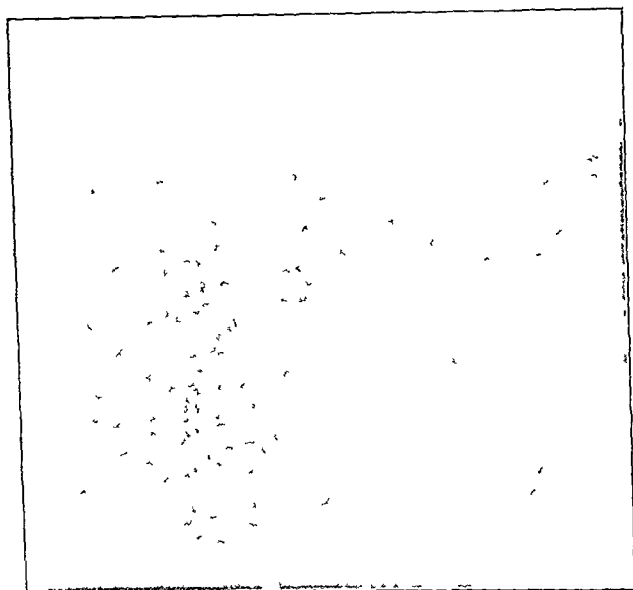


Fig 5—Nine weeks after operation

and the forearm extended as far as it will go, this will show any fracture of the lower end of the humerus, or of the condyles, but will not give an accurate idea of the direction of oblique fractures which run in an antero-posterior direction. It will therefore be necessary to take another skiagraph, with the plane of the condyles at right angles to the plate, and the forearm flexed at almost a right angle and the hand pronated. It may be impossible in some varieties of injuries to get the arm in these positions, but we should strive to come as close as possible, because if we habituate ourselves to certain positions and relations we can with greater ease detect any deviation from the normal, and right here let me remark that no one is capable of interpreting a skiagraph of an injured bone or joint who has not made a study of the skiagraph of bones and joints which are known to be normal.

In diagnosing elbow injuries in children under 18 years of age it is absolutely necessary to take pictures of the sound as well as the affected side, on account of the fact that the epiphyses are either entirely cartilaginous or not yet united to the shaft of the bone. It

may be difficult to tell whether there has been a dislocation of one of the epiphyses by either palpation or x-ray if there is no deformity, but by comparing the skiagraphs of the two sides the slightest abnormality can be detected, and I find it better in all cases to keep the arm splinted for at least two weeks when the child complains of pain or shows a disinclination to use the arm.

Fractures of the olecranon are best treated by driving a long wire nail through the tip of the process down into the shaft of the bone; this may be done without cutting if the fragment can be properly adjusted and there is no blood between the pieces, otherwise it is better to cut the skin and clean out the blood first. Broken-off condyles are retained in position by means of steel staples, one prong of which is driven into the shaft of the bone and the other prong into the fragment. In using staples or nails which have to enter the compact tissue of the bone it is necessary to drill holes before driving them in, being careful that the holes are just small enough to hold the nail or staple tightly. In cancellous bone nails may be driven in without drilling.

First make your diagnosis, then adjust the fragments, and if a splint will not retain them in proper position, make fixation as I have indicated, being particularly careful as to your asepsis, and your results will be very much superior to those obtained by the expectant plan.

590 Sutter Street.

A CASE OF SUCCESSFUL REMOVAL OF AN ENLARGED SPLEEN,

WITH TWISTED PEDICLE, ADHERENT TO THE RIGHT SIDE OF THE PELVIS, IN A WOMAN PRESENTING MULTIPLE NODULATION AND PIGMENTATION OF THE SKIN.

J. CLARENCE WEBSTER, M.D.

CHICAGO.

WITH REMARKS ON THE MEDICAL ASPECTS OF THE CASE. THEODORE TIEKEN, M.D.

CHICAGO.

NARRATION OF THE CASE.

Mrs. W., Jewess, housewife, aged 38, was admitted to my service in the Presbyterian Hospital, Chicago, Aug. 25, 1902, with pain in the pelvis and lower abdominal region, generally of a dull, aching character, varying in intensity and radiating occasionally to different portions of the upper abdominal and thoracic regions.

The pain is most marked in the right iliac region, where there is a swelling which varies in size and consistence from time to time. The latter is usually tender when palpated. There is always great aggravation of her suffering during menstruation.

She also complains of frequent and occasionally painful micturition, shortness of breath, intense headaches, swollen feet, leucorrhea, and of occasional bloody stools. She also complains of a swelling in the region of the navel, of discoloration and nodulation of the skin.

Duration and History.—The patient states that she first noticed the swelling in the right iliac region 17 years ago, after the birth of her first child. It was then flat and about as large as her hand. It gradually increased in size, becoming more and more painful and sensitive to pressure. Eight years ago she was seized with intense agonizing pain of a colicky nature, and ever since has suffered from similar attacks every two or three months; they usually last one or two days, and the patient is compelled to inhale chloroform in order to obtain relief.

Frequently after the attacks the urine was noticed to be dark, reddish-brown in color and somewhat foul-smelling.

As it was voided there was usually smarting in the bladder and urethra. The iliac swelling at other times became smaller, less firm in consistence and less tender.

The pigmentation and nodulation of the skin have been present for many years. They began to appear about a year after the development of the swelling in the right side.

Four years ago, an abdominal section was performed in another hospital and the patient states that the operator informed her that the swelling was an inoperable tumor of the right kidney and that nothing could be done. A few months after this operation the abdominal wall cicatrix began to stretch and a ventral hernia gradually developed.

Sexual History.—Menstruation began at 13. The type has always been irregular until the time of operation four years ago; ever since it has been fairly regular, of the 28-day type. The duration is usually 5 days, the flow being profuse. There has always been some pain in connection with the periods, most marked immediately before and after. Since the appearance of the swelling in the right iliac region, the pains have been very severe at menstrual periods. She states that at these times she frequently passes blood in her stools.

Previous History.—In early life she had various diseases of childhood. As a young woman she lived in the south and had malarial attacks several times. At the age of 22 she had pulmonary hemorrhages during a period of eight months, losing considerably in weight at the time; five years ago she was also similarly troubled for several months. She coughs occasionally, and states that she "catches cold in her chest" easily. At the age of 26 she had typhoid. For many years she has been troubled at times with pains in various joints; they have sometimes swelled and become very painful. She states that on two or three occasions she has been jaundiced.

Family History.—Her father was alive when she last heard of him, two years ago. Her mother died at 66 of measles. She has two sisters who are well. Several members of her father's family have had tuberculosis.

State on Admission.—The patient is somewhat poorly nourished and has a haggard expression. The skin of the face is of a light brown hue, the pigmentation varying in different parts. The trunk is also pigmented, there being a generally diffused light brown tint, as well as patches of deep brown, varying in size from one to six or eight centimeters in diameter. Many cutaneous nodules, varying in size from a pin head to a marble, are also visible. Some are entirely below the surface, some bulge the latter slightly, others are sessile or pedunculated.

Abdomen.—In the middle line there is a vertical scar extending downward five inches from a little above the navel. The latter is everted and stretched as is the scar tissue. The recti muscles are $3\frac{1}{2}$ inches apart in the region of the navel as the patient lies on her back. In the erect posture the intestines bulge between the muscles, forming a hernia in almost the whole length of the scar. In the right iliac region a swelling is visible, being very prominent. It is firm in consistence and can not be moved. The patient states that it is tender when it is palpated firmly. Its upper end is about 2 in. above the level of the anterior superior iliac spines. It descends below the pelvic brim, where it is in close relation to the right half of the retroverted uterus.

Bimanual Examination.—The uterus is somewhat enlarged, retroverted and fixed. The appendages are matted and fixed at the sides of the uterus and are somewhat sensitive. The right half of the pelvis is occupied by the lower portion of the iliac swelling. It is close to the uterus with which it appears to be connected.

Examination of Blood.—(Made by Drs. Farnum and Barnhardi.) Erythrocytes per c.mm., 4,016,000; leucocytes per c.mm., 16,800; hemoglobin, 70 per cent.

Urinalysis.—Amount in 24 hours 400 c.c., sp. gr. 1.010, acid. Slight trace of albumin, a few leucocytes and epithelial cells. Some erythrocytes. A few hyaline casts. Urates.

On August 29 the interior of the bladder was examined. The mucosa was normal save behind the trigone, where there was a small, deeply-congested area.

The ureters were catheterized. The left catheter was easily passed. The right one met with an obstruction about 3 inches above the bladder, but, after a little manipulation was passed upward about 10 inches. The catheters were left *in situ* for $1\frac{1}{4}$ hours. The specimens of urine differed somewhat, as follows:

RIGHT SPECIMEN.

Very turbid.

Consid. serum-albumin.

Urea 1.3.

A few hyaline casts and one blood cast.

Small transitional epithelial cells.

Many erythrocytes.

Few leucocytes.

LEFT SPECIMEN.

Quantity $3\frac{1}{2}$ times that of the right side.

Slight serum-albumin.

Urea 1.7.

No casts.

Temperature and Pulse.—The temperature varied considerably while the patient was in hospital. It was usually normal, but frequently varied from 99 to 102. The pulse varied greatly, from 72 to 120.

X-ray examination of the abdomen and pelvis revealed no calculus.

The patient was kept under observation until September 9, when she was sent home.

Treatment.—She was placed on milk diet, a mixture of sodium iodid, sodium chlorid and sodium phosphate being administered. The daily quantity of urine gradually increased. Slight variations in the size and sensitiveness of the iliac swelling were noted from time to time.

September 17 the patient returned to hospital and was prepared for abdominal section. Previous to operation the hemoglobin was 80 per cent. and the leucocytes 8,800 per c.mm. The 24-hour quantity of urine was 2,000 c.c.; no casts were found in it and only a few erythrocytes and leucocytes.

Operation.—September 25 the abdomen was opened in the middle line. Both kidneys were found to be normal in size and position. The liver was normal. The stomach and transverse colon were lower than normal. Anterior to the iliac swelling were small intestines and omentum. The latter enveloped a considerable portion of the swelling and was widely adherent to it, as well as to the parietes and pelvic viscera.

The swelling proved to be an enlarged spleen. It was adherent to omentum, intestines, iliac fossa, bladder, right appendages and uterus. The vermiform appendix was enlarged and buried in adhesions on the posterior surface of the spleen. Extending from the hilum of the spleen a rope-like band extended upwards and to the left towards the celiac axis. It consisted of the twisted splenic vessels. I estimated that the pedicle of the spleen had in it between two and three twists. The vein was enormously enlarged, especially near the spleen, where its diameter was nearly an inch. The uterus was retroverted and the appendages buried in adhesions. The small intestines and sigmoid flexure were firmly adherent to the uterus and broad ligaments.

After removing a large portion of the omentum, the adhesions around the spleen were separated with some difficulty. The vessels in the pedicle were secured with catgut, and the spleen was removed. As the patient's pulse had become very rapid and irregular, it was deemed advisable not to interfere with the pelvic organs. The abdomen was filled with salt solution and closed, the separated recti being well approximated.

The patient made a good recovery. During the first two days the pulse varied from 90 to 120, but thereafter was satisfactory.

On October 24 she returned home, feeling in good condition. There has been a considerable clearing up of the skin-pigmentation since the operation, but no change has been noticed in the nodules.

Report on the Spleen.—The spleen weighs 28 ounces and measures 7 in. vertically, 4 in. in breadth and $3\frac{1}{2}$ in. in thickness. It is dark colored, the capsule is thickened and covered with adhesions and portions of omentum. Dr. Hamley's report as to the microscopic examination is as follows:

1. Marked congestion, uniform throughout the spleen, only a slight degree being observed within the Malpighian corpuscles.

2. A moderate increase in the connective tissue trabeculae and walls of blood-vessels.

3. Some thickening of the capsule.

4. Mast-cells are very numerous.

5. In some parts there is increased pigmentation.

A few skin-nodules were removed for examination and Dr. Hamley reports on them as follows:

Each consists of fibro-cellular tissue, varying in compactness and in the character of the cells; the latter are mostly round. In some parts hyaline degeneration is found. Many mast-cells and plasma-cells are seen, the former not being found in the degenerated areas. Mitotic figures are occasionally noticed in the connective tissue cells. The nodules contain a few capillaries. The epithelium of the skin is considerably thinned over some of the nodules.

REMARKS ON THE CASE.

The case presents features of considerable interest. In the first place there was great difficulty in determining the nature of the iliac swelling. The patient's statement that her abdomen had been opened four years previously and that the operator had stated that the mass was an inoperable right renal tumor naturally biased our judgment. In view of the long duration of the swelling and its slow increase in size, malignancy could not come into consideration. If a new growth it seemed more likely to be some form of benign fibrous fibro-cystic or fibro-lipomatous swelling, similar to those described by Wilks, Bristowe, Billroth and others. Wilks in 1869 described such a tumor of the right kidney as large as a child's head, which had caused hematuria and pain for ten years. The pigmentation of the skin suggested an involvement of the suprarenal bodies.

The clinical symptoms, however, suggested strongly hydronephrosis of the intermittent type, associated with a calculus or with stricture or torsion of the ureter. There were severe crises of pain requiring the administration of chloroform, the swelling varied in size and became smaller when urine was passed after the attacks of pain. The urine was frequently dark as if containing blood, and on ureteric examination blood was found in it. The presence of leucocytes in the urine and the irregular elevation of temperature suggested an infective process in the supposed renal swelling. No stone was found on x-ray examination. The passage of a catheter for ten inches into the right ureter did not seem consistent with the supposition of ureteric torsion, especially when the kidney appeared to be partly within the pelvic cavity. An obstruction was felt a short distance above the bladder, but the catheter passed it without great trouble. The patient's statement as to the increase and diminution in the size of the tumor was then thought to be exaggerated or to be explained by a rising and falling, merely due to filling and emptying of the bladder. Slight variations in the size and consistence of the swelling were certainly observed by me, but were not at all marked. The possibility that the tumor might be a pedunculated uterine fibroid, a fibroma or dermoid of the ovary or a large right hydrosalpinx was considered, but only by conjecture. Such swellings might be of long duration and might cause pressure on the ureter, especially if associated with marked displacement of the pelvic viscera and cicatrizations following old peritonitic adhesions. It was never supposed that the swelling might be a spleen.

A wandering spleen may undoubtedly sometimes enter the pelvic cavity, and an enlarging spleen, e. g., in splenic anemia or leucocythemia, may descend into

the pelvis on the left side and be mistaken for a tumor of pelvic origin. The present case is the only one recorded, so far as the writer has been able to ascertain, in which an enlarged spleen has become fixed in the right side of the pelvis.

The variations in the size of the tumor were probably associated with increase and diminution of the quantity of blood in the spleen, associated with disturbances in the circulation due to torsion of the pedicle. The attacks of pain were similar to those associated with torsion of the pedicle of ovarian and fibroid tumors, local peritonitis having developed leading to adhesions between the spleen and surrounding structures. Bland Sutton has pointed out that retroversion of the uterus may be caused by the descent of a wandering spleen into the pelvis. It is extremely likely that this relationship existed in the present case, the firm adhesions which covered the uterus and appendages having resulted from peritonitis secondary to splenic torsion.

MEDICAL ASPECTS OF THE CASE.

THEO. TIEKEN, M.D.

Blood Examination.—The first examination made was six days after operation, Sept. 30, 1902: Erythrocytes, 4,300,000; leucocytes, 22,000; hemoglobin, 60 per cent (Dare); color index, .69.

(a) The fresh specimen shows corpuscles to be of normal size, rather pale, no poikilocytosis. No malarial pigment or living organisms found.

(b) Stained specimen (Ehrlich's triacid mixture). Erythrocytes normal size, stained uniformly. No macrocytes; few microcytes; two normoblasts; no megaloblasts; no microblasts; no poikilocytosis; no myelocytes.

(c) Differential count of two hundred leucocytes: Small mononuclears, 14 per cent.; large mononuclears, 7 per cent.; transitional forms, 1 per cent.; polymorphonuclear, 77 per cent.; eosinophiles, 2 per cent.; no mast cells.

Second examination, nineteen days after operation, Oct. 13, 1902: Erythrocytes, 4,408,000; leucocytes, 13,000; hemoglobin, 72 per cent. (V. Fleischl) 73 per cent. (Dare); color index, .80.

(a) Fresh specimen shows normal shape and size of red corpuscles, slightly pale; no malarial organisms or pigment seen.

(b) Stained specimen shows similar picture to No. 1; no myelocytes.

(c) Differential count of two hundred leucocytes: Small mononuclear, 13 per cent.; large, 17.5 per cent.; transitional forms, 1.5 per cent.; polymorphonuclear, 68.5 per cent.; eosinophiles, 1.5 per cent.; no mast cells.

Third examination, twenty-six days after operation, Oct. 20, 1902: Erythrocytes, 4,420,000; leucocytes, 11,200; hemoglobin, 77 per cent (V. Fleischl); color index, .82.

(a) Fresh specimen same as previous examinations; no malarial organisms.

(b) Stained specimen: two red corpuscles were found containing a ring of pigment very similar in appearance to the tertian malarial organism. Although unable to find organisms in the fresh specimen, these two were so characteristic as to leave but little doubt. There was no extra-corpuscular pigment in this specimen, which makes it all the more improbable that these were artefacts.

(c) Differential count of four hundred leucocytes: Small mononuclear, 12 per cent.; large mononuclear, 17 per cent.; transitional forms, 1.8 per cent.; polymorphonuclears, 65.2 per cent.; eosinophiles, 2 per cent.; no mast cells; no myelocytes.

One large mononuclear cell was seen with faint granules. Five normoblasts were seen while counting four hundred leucocytes.

Comparing the three differential counts we have the following:

	Per cent.	Per cent.	Per cent.
Small mononuclear	14	13	12
Large mononuclear	7	17.5	17
Transitional forms	1	1.5	1.8
Polymorphonuclear	77	66.5	65.2
Eosinophiles	2	1.5	2
Mast cells	0	0	0

Briefly summing up the differential counts made at different periods after operation, we see the following changes: A slight decrease in the small mononuclear elements; an increase in the large mononuclear type from 7 per cent. to 17 per cent.; a very slight increase in the transitional forms; a decrease in the polymorphonuclear type from 77 per cent. to 65.2 per cent.; no change in the eosinophiles.

I am sorry that it is impossible to compare the differential count before operation, as this was not made, because there was nothing to indicate the importance of such a step before discovering that the tumor was an enlarged spleen. The findings as indicated in the above examinations of the blood correspond so closely to those of previously reported cases of splenectomy that we need not dwell further on this part of the subject.

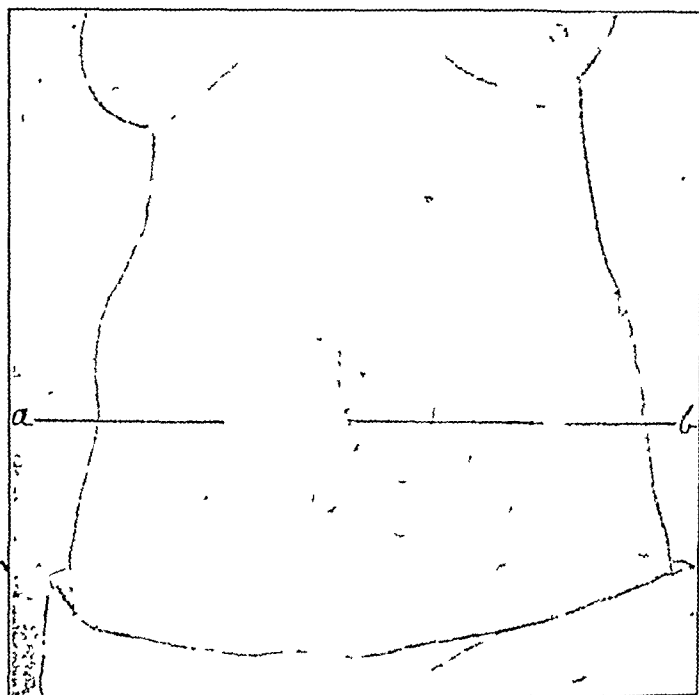


Fig. 1—Sketch of the anterior surface of the abdomen previous to operation. *a*, Swelling caused by the enlarged spleen; *b*, stretched scar tissue resulting from old operation.

Kurloff's experiments show that the spleen is not indispensable in the guinea-pig and some other animals, as the white corpuscles are formed by the lymphatic glands and bone marrow in sufficient numbers to compensate for the loss incurred by removal of the spleen.

In man, too, it has been found that removal of the spleen is not followed by any serious consequences, numerous cases having been reported in which the operation has been carried out for the relief of certain conditions, e. g., trauma, abscess, tumors, cysts, chronic hypertrophy, cirrhosis, leukemia and splenic anemia. In the latter condition splenectomy has been followed by very satisfactory results and is, undoubtedly, to be regarded as a valuable therapeutic measure.

Da Costa states: "Excision of the spleen in man is followed by a diminution of hemoglobin and erythrocytes, the degree of which is generally believed to be more pronounced than can be accounted for by the simple factor of hemorrhage incident to the operation." As regards the present case, the hemoglobin was reduced to a greater degree than the red cells. No doubt this

is to be explained partly by the very slight loss of blood during operation, and partly by the loss of blood prior to operation, from frequent intestinal hemorrhages, hematuria, and possibly profuse menstruation. The leucocytosis was most probably due to the hemorrhage incident to operation, since it rapidly decreased from 22,000 on the sixth day to 11,200 twenty days later. The presence of normoblasts may be attributed to the same factor.

Let us now consider carefully the facts brought out in the history and see if it is possible to arrive at definite conclusions regarding the diagnosis in this case.

Osler has recently reported a series of cases of a disease termed splenic anemia, which he defines as follows: "A specific malady of unknown etiology, char-

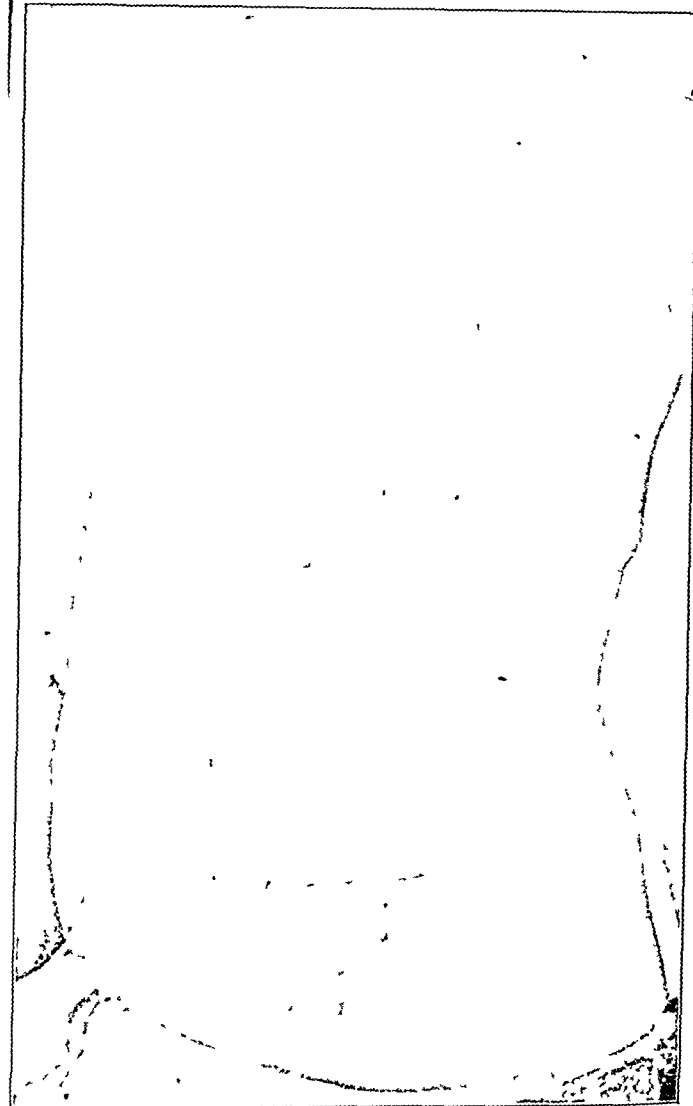


Fig. 2—Back of patient showing multiple nodulation and pigmentation. The anterior aspect of the trunk presents a somewhat similar appearance.

acterized by a chronic course, enlargement of the spleen, a secondary anemia, a marked tendency to hemorrhage from the stomach, a liability to jaundice, cirrhosis of the liver, ascites and pigmentation of the skin."

In the case under consideration there is no definite etiologic factor explanatory of the various disturbances, although the patient gave a malarial history and had lived in a malarial district. Malaria might account for the splenic tumor, but not for the other signs and symptoms. The history is that of a chronic diseased state, extending over a period of seventeen years or more, associated with enlargement of the spleen. There were the following features: Secondary anemia; a tendency to hemorrhage from the kidney and bowel (the blood passed

in the stools may have come from the stomach); recurring attacks of jaundice; the pigmentation of the skin. Having present so many of the prominent symptoms of a typical case of splenic anemia are we justified in making a diagnosis of splenic anemia? Cases 14 and 18 in Osler's series correspond very closely to ours in every detail, having an enlarged spleen, secondary anemia, pigmentation of the skin, hematuria, jaundice, and in addition, cirrhosis of the liver, which, however, was not demonstrable until late in the disease.

In the case under consideration there was no liver cirrhosis nor any history of ascites. These conditions are, however, usually found only in the advanced stages of splenic anemia. The splenic enlargement is not as large as that reported in most cases of long-standing anemia. Its size might, indeed, be due to chronic congestion and hypertrophy of the tissues secondary to torsion of the pedicle.

In the present case there was a peculiar nodular condition of the skin which came on about one year after the tumor was first discovered. Does this bear any relation to the disease? In reviewing the literature at my command I find no mention of such a condition in splenic anemia. Oertel describes a somewhat similar appearance in a case of leukemia, but there was no such pigmentation associated with it. Kreibich describes another case of leukemic lesions of the skin, associated with some pigmentation, but the patient had been taking arsenic for some time previously, and this might have caused the pigmentation. Pinkus also describes a case of lymphatic leukemic lesions of the skin. Since all of these cases are positively of a leukemic nature, our case is, so far as I can ascertain, the only one of splenic anemia associated with a nodulation of the skin.

Our case was exhibited before the Chicago Dermatological Society, and the opinion was generally expressed that the nodulation was of the nature of a molluscum fibrosum.

A FEW PRACTICAL POINTS IN THE TECHNIC OF NEPHRORRHAPHY AND HERNIOTOMY, AND A NEW MODIFICATION OF ALEXANDER'S OPERATION.

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In presenting this paper to the medical profession I wish merely to call attention to a few simple details that I have found of such practical benefit that my results are far superior to what they formerly were.

By referring to my case-books I note that the cases operated on prior to 1890 and in which I followed the technic then in vogue, are not to be compared in practical results, rapidity of healing and permanent benefits, to my subsequent cases, in which I followed the technic here given.

NEPHRORRHAPHY.

An incision 10 cm. long is made 4 cm. from the spine and 2 cm. below the twelfth rib and parallel to it, cutting through the skin, fascia and muscles. The finger is inserted in the incision and the peritoneum is pushed out of harm's way. The fatty capsule of the kidney is caught, opened and resected in the dorsal part of the kidney. The capsule proper is now incised to the extent of 8 cm. on its dorsum, the capsule then freed 3 or 4 cm. in all directions by the finger.

The slight bleeding that follows this denudation is easily arrested by compression. To anchor the kidney, a double silkworm-gut continuous suture is made on

each side of the incision, starting at A (Fig. 1), passing through the skin, fat, muscle and capsule proper; taking about 1 cm. of the muscles with the capsule proper and passing out in the inverse order, as shown in Figure 1 at A. The same procedure for the opposite side is shown at B and B'. By pulling these sutures taut, the capsule is drawn to the side and exposes a raw surface of kidney parenchyma about 3 cm. wide and 6 cm. long. A lead nickel-plated shield is threaded and shotted and the shot crushed on these sutures, when moderate tension has been accomplished.

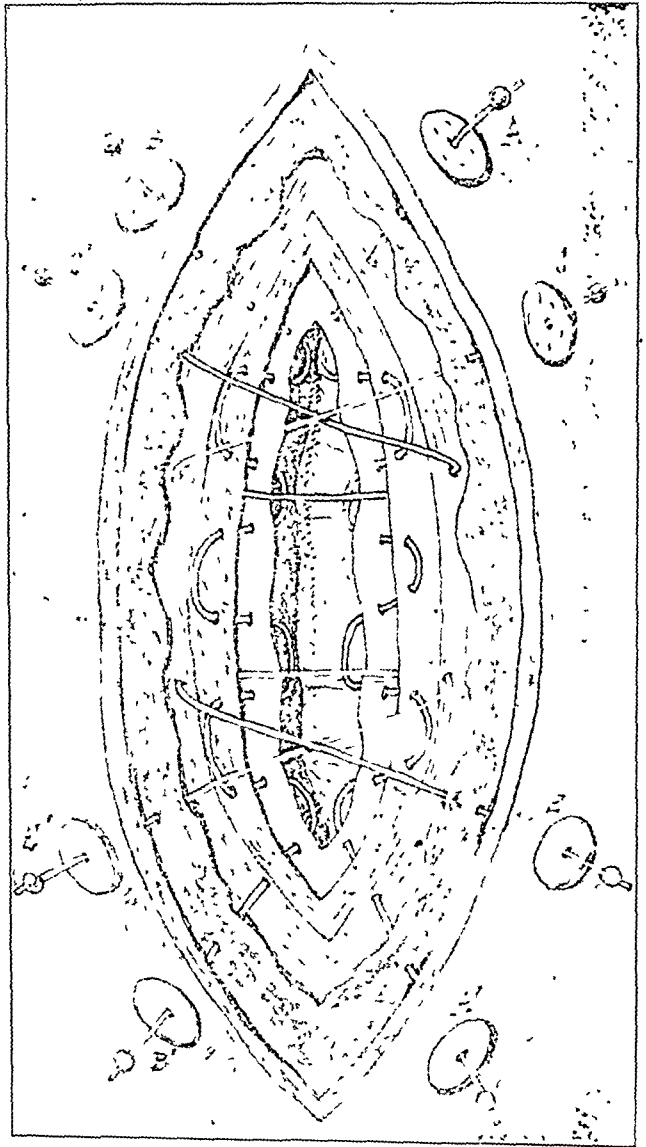


Figure 1.

The next step in this operation is to draw the muscles over the raw surface of the kidney, which is accomplished by passing double silkworm-gut sutures, starting at C, going through skin and fat, crossing over and taking in all of the muscles of opposite side, then recrossing over surface of kidney to take the muscles of the side whence suture started; to be recrossed and take in fat and skin, as shown in Figure 1, C'. The same procedure is followed in lower angle of incision, as shown in Figure 1, E and E'. If necessary, one or two more of this sort of figure-of-eight suture may be made, as shown in Figure 2.

When these figure-of-eight-like sutures are made tense, they serve to draw the muscle edge together and bring

their posterior raw surface in contact with the raw surface of the kidney parenchyma, at the same time bringing the adipose and skin in opposition. The "agraffes" (hooks) of Dr. Michel serve to make linear apposition of the skin, as shown in Figure 3.

The only dressing made is plain sterile gauze with tight-fitting abdominal bandage. The patient is kept

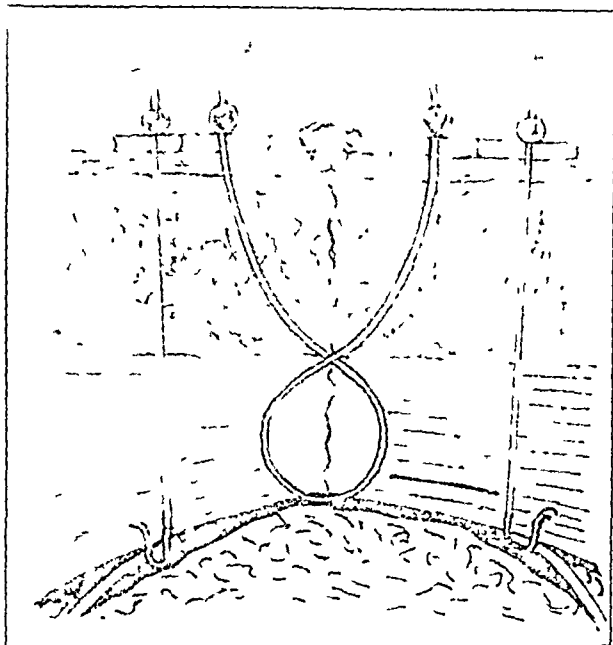


Figure 2.

in dorsal decubitus for about twenty days. The third day the agraffes of Michel are removed and collodion with absorbent cotton applied to skin incision.

On the twelfth to fifteenth day the shot and shield of A and B', C and E', are removed, leaving the sutures to loosen by the respiratory movements, so as to avoid

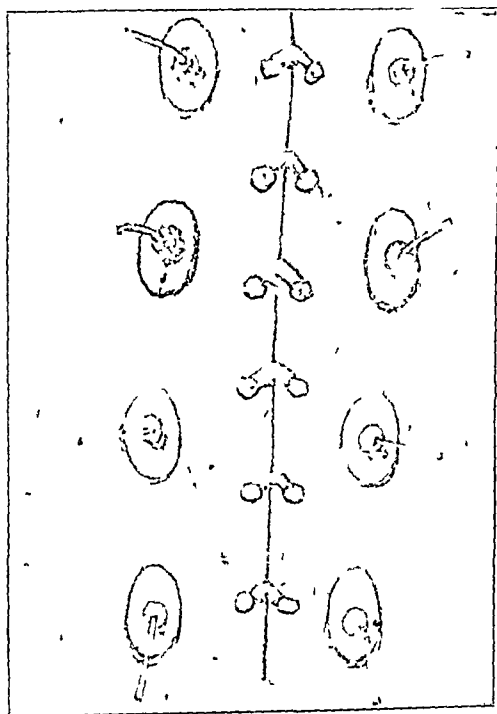


Figure 3

pain and the possible breaking of the sutures in its final removal, a few days afterward.

By this method, it will be noticed, there are no buried sutures left to serve as a cause for future trouble.

Should there be an excess of oozing, a small strip of gauze may be left for drainage between sutures C and E' and removed the second or third day of operation.

Since 1890 I have performed this operation 281 times, following this technic, and have never yet observed a failure. At this time it may serve a useful purpose to remark that in ten cases of double nephrorrhaphy, where, prior to operation, there had existed chronic nephritis and enlarged kidneys, with albumin and granular casts in the urine, in a few months following operation the urine cleared itself of pathologic products, and an evident diminution in the size of the kidneys was apparent, which I attributed to the freeing of the capsule of the kidney and the improved circulation in that organ.

In sixteen cases of single nephrorrhaphy, where the floating kidney was enlarged and congested, the bene-

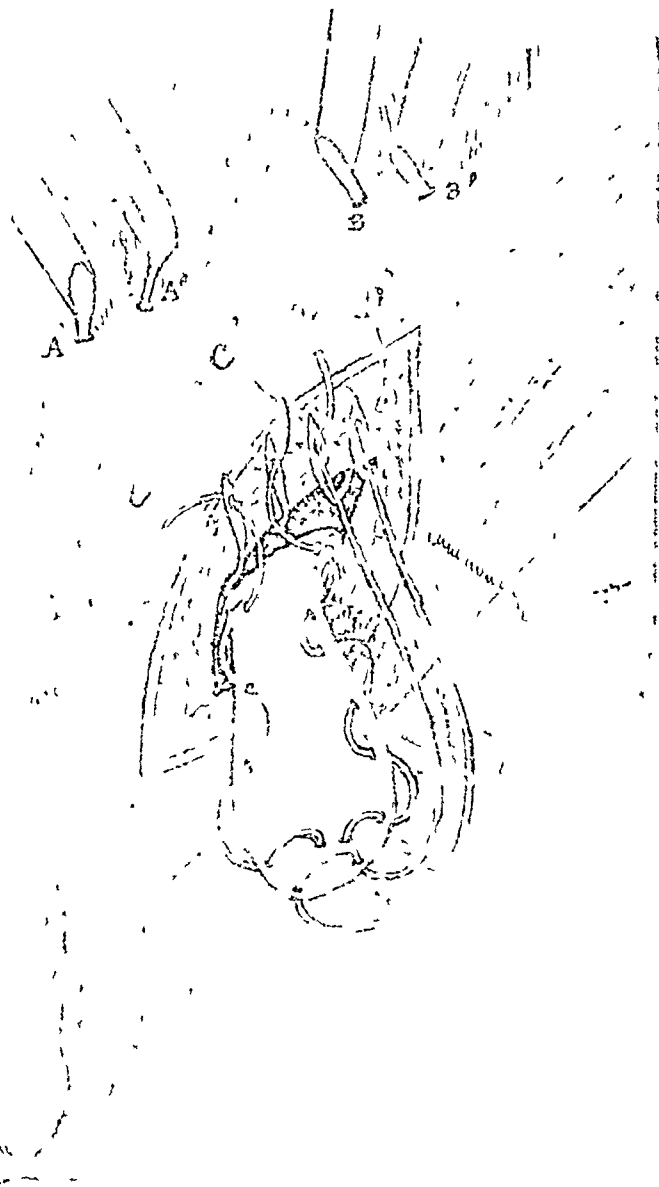


Figure 4.

ficial effects of the operation were apparent in thirty days and the kidney practically restored to normal in two months following the operation.

TECHNIC OF HERNIOTOMY FOR RADICAL CURE OF HERNIA.

An oblique incision of the skin 5 cm. long is made parallel to the pillars of the inguinal canal. With the finger separate all the cellular tissue until the vas deferens is reached. Gentle traction is now made on the vas deferens, which brings the sac into view, which is usually attached thereto. The sac is now freed from the cord and adjacent structures, and for a distance of 3 cm. around and within the internal abdominal ring.

A curved needle, armed with double silkworm-gut sutures, is inserted at the neck of the sac, following its edge in the entire length of the sac, keeping to the margin, across the fundus and up the opposite edge, making a purse-string suture, as shown in Figure 4,

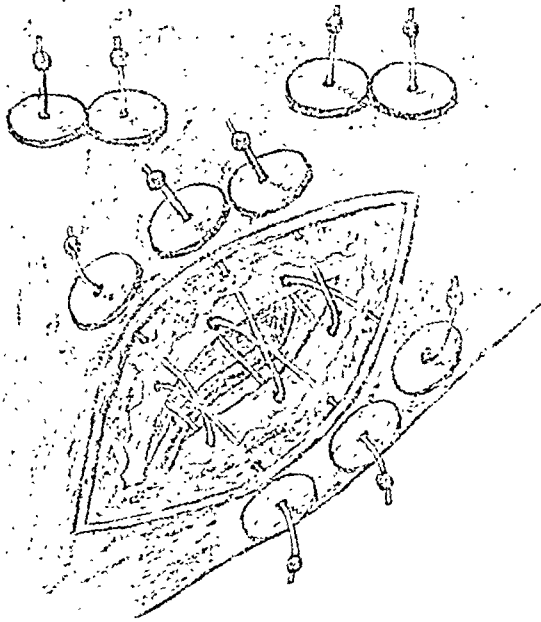


Figure 5.

C and C'. A second double silkworm-gut suture is now passed through the fundus of the sac, as shown in Figure 4, D and D'.

Now the finger is inserted through the external ring,

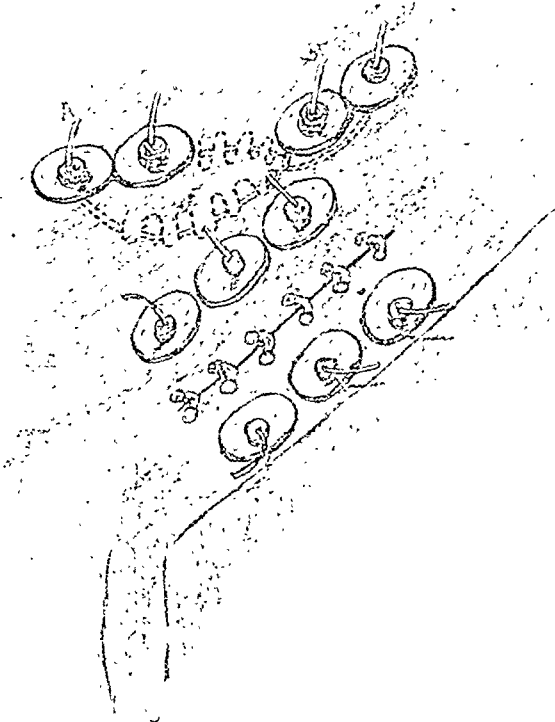


Figure 6.

between the peritoneum and abdominal wall. A Doyen's needle is inserted 4 cm. above the pillars and 3 cm. internal, i. e., towards the median line, as shown in A, Figure 4, and passed through skin, fascia and muscles until the finger is reached, and on which it is guided

through the wound. Suture C is now threaded to this needle and brought out at A. This same process is followed in A' by inserting needle $1\frac{1}{2}$ cm. external to A, and on which thread C' is passed and brought out at A'.

These sutures are now held by forceps. About 3 cm. external to A' and parallel to it, the Doyen's needle

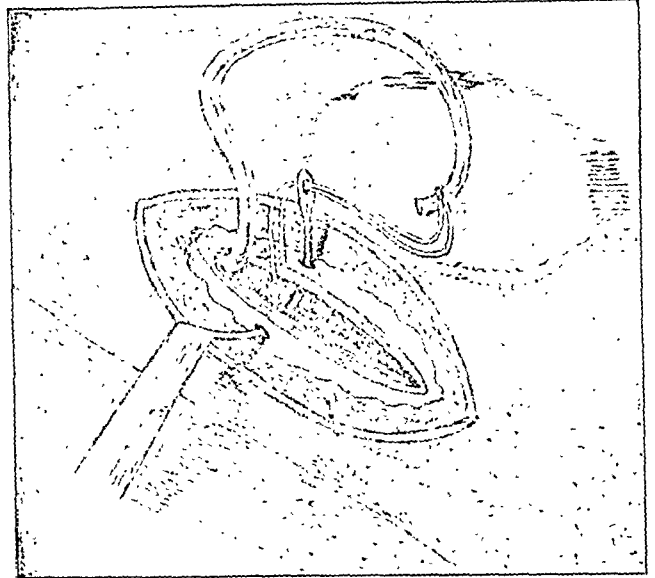


Figure 7.

is inserted as previously described, and threaded with suture D, and drawn through B; $1\frac{1}{2}$ cm. external to this suture the needle is again inserted as above and threaded with D' and drawn out at B'. Suture A and A' are drawn moderately tense and threaded with shields and shot, and shot crushed.

The same process is followed with suture B and B'. It will be readily seen that drawing taut sutures A and A' and B and B', the hernial sac is held taut between the

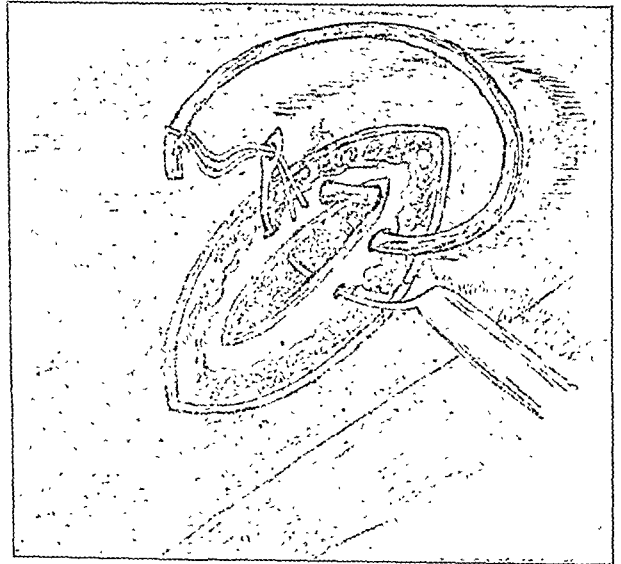


Figure 8.

parietal peritoneum and abdominal wall, making a bulwark above the internal ring, which serves at all times to resist any intra-abdominal pressure.

The cord is replaced in its normal bed and the pillars and abdominal wound carefully closed over it by two

or three figure-of-eight sutures, as described in the technic of nephrorrhaphy and shown in Figure 5.

The final closing of the wound and schematic drawing of the folded sac is shown in Figure 6.

On the third day the Michel hooks are removed and collodion and absorbent cotton applied to the skin incision.

On the tenth to the twelfth day the shot-holding sutures A and B are cut loose, also one end of each of the figure-of-eight sutures are released and left in

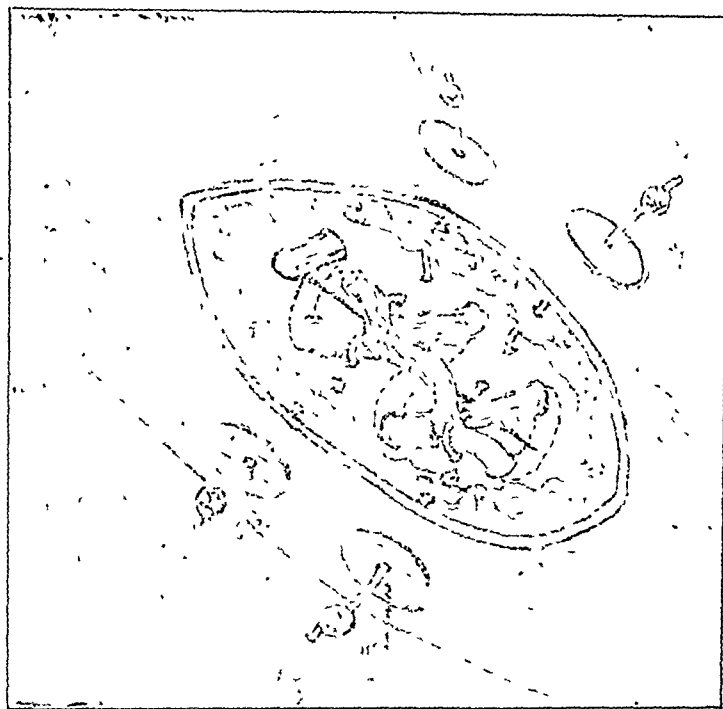


Figure 9

position for two or three days more, at which time they are easily removed without pain.

Should, at this time, it be found difficult to remove the folded stitch A and A', a small strip of gauze is wound under the remaining shield so as to form a cushion which will serve to assist the respiratory movements in further freeing the stitch.

In this operation there are no sutures left for absorption or encystment.

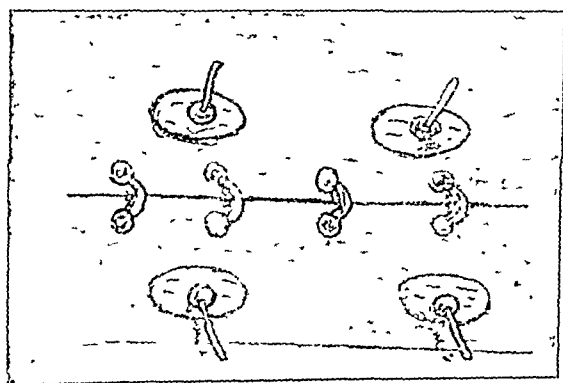


Figure 10

A NEW MODIFICATION OF ALEXANDER'S OPERATION FOR SHORTENING THE ROUND LIGAMENTS.

An incision of 6 cm. is made over and parallel to the inguinal canal through the skin; with the finger dissect the fatty tissue down to the fascia. With the assistance of a grooved director, perforate the fascia over the inguinal ring. The small bunch of pearly white, fatty tissue, commonly found over the inguinal ring, is picked up, and on the inferior side is found the round ligament. This is now carefully dissected from its peritoneal hood

for a space of 10 or 12 cm. A silkworm-gut suture is tied at its distal end. A Deschamp's needle is passed through the fascia and muscle of the inguinal ring about $\frac{1}{2}$ cm. from its edge and threaded with the silkworm-gut suture, as shown in Figure 7.

The round ligament is made to follow this carrier suture and its own structure used as a suture of the inguinal ring. About 2 cm. below, this same method of suturing is followed, as shown in Figure 8. Again, a third suture is made as above. The end of the round ligament is overlapped over the last two round ligament sutures.

These round ligament sutures are anchored in place by silkworm-gut sutures, placed in the following manner: A curved needle, armed with silkworm gut, is passed through the skin and fat and taking a loop of fascia, then passing through the middle of the two crossed round ligaments, dipping again into the fascia and coming through the fat and skin of opposite side, as shown in Figure 9, A and A'. This same process is followed for suture B and B'.

It will be noticed that the inguinal ring and canal will thus be sutured by the round ligament itself and reinforced by its overlapping, which in turn is anchored by a silkworm-gut suture, which, when drawn taut, presses them together and overcomes the necessity of leaving any buried sutures in the wound. These silkworm-gut sutures are threaded with shields and shot, drawn moderately tense and the shot crushed. The Michel hooks are used for the close approximation of the skin edges, and removed the second or third day, and the line of incision covered with collodion and absorbent cotton. In about fifteen days following the operation, shot A and B' are cut off and the suture left for three or four days more to partly free itself, at which time the sutures may be removed painlessly.

When the round ligaments are illy developed and there is marked uterine retroversion, an assistant is requested to raise the uterus into position by vaginal manipulation.

THE MOSQUITO AS A CARRIER OF DISEASE.

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While preparing a paper for the Decatur (Ill.) Medical Society on the "Mosquito as a Carrier of Disease," I was surprised to learn, through the numerous medical journals consulted, that so many of our profession had adopted the extreme, and to me the erroneous, view that the mosquito was the only intermediate host for the transmission of yellow and malarial fevers.

While the various scientific experiments made during the past few years prove conclusively that the mosquito is one great factor in the transmission of these fevers; and that by the extermination of the mosquito, and the proper precautions against allowing this insect to bite those afflicted with these diseases, a great reduction of the number of patients can be made in any community; yet, in my estimation, the evidence does not establish the fact that the mosquito is the only medium through which these fevers can be propagated. Those who maintain that it is claim that the experiments in Cuba, in 1900, of the board for the "Study of the Etiology and Prevention of Yellow Fever," prove the correctness of this, as to yellow fever. It may prove so to those who have not had any practical experience in the treatment and

study of yellow fever during epidemics of that disease; but not to many who have had such experience.

The experiments of the board on which their eighth conclusion, "Yellow fever is not conveyed by fomites, and hence disinfection of articles of clothing, bedding or merchandise, supposedly contaminated by contact with those sick with the disease, is unnecessary," was founded on placing three non-immunes in a small house in which was placed clothing, bedding, etc., contaminated by having been used by persons sick with yellow fever. They slept there twenty nights, then two other non-immunes took their place for the same time, then again two other non-immunes for the same period. A test was made with these seven men from Nov. 30, 1900, to Jan. 31, 1901. As none of these men contracted the disease, the board at once jumped to the conclusion that this forever settled the non-contagious character of yellow fever—hence their eighth conclusion.

This test was totally inadequate. Perhaps had they placed seven other men to the same test they would have had entirely different results. The erratic and uncertain transmission of yellow fever during an epidemic from one part of an infected district to another, striking down some non-immunes, and leaving others who had been equally exposed, should teach us to place but little reliance on so meager experiments as those made by the board. Yet many members of our profession have followed the dictum of the board, as a flock of sheep will follow their leader, even though he takes them over a precipice and dashes them to death; which will be the result to non-immune physicians and their patients, should they, during an epidemic of yellow fever, disregard all the usual precautions of exposure to infected articles and to proper and thorough disinfection.

During my eleven years' residence in the South, and an experience in the study and treatment of yellow fever during three epidemics, of which one lasted from August 15 to December 25, and occasioned 1,375 cases and 125 deaths within the city limits, there were a number of non-immunes who passed through this terrible scourge—taking care of the sick and being bitten by the numerous *Culex* mosquitoes that existed—and yet did not take the disease. Some who did this in the epidemic of 1867 took the disease in the next epidemic, 1871. Every physician who has had an experience with yellow fever during an epidemic can give the same experience.

While I was on duty at Santiago de Cuba as U. S. Army surgeon from July to November, 1898, numerous instances came under my observation of non-immunes being in contact with yellow fever patients, and, of course, at the same time being bitten by the Cuban *Culex* mosquitoes, and yet they did not take the disease. All who are exposed to yellow fever do not take it; which we know to be true of all other infectious and contagious diseases. Hence the eighth conclusion of the board appears almost absurd. Simply because these seven men did not take the disease is no evidence that it can not be taken by exposure to articles contaminated with yellow fever. If the same rule was applied to the mosquito theory it would not stand for a moment, for hundreds of non-immunes are bitten every year by infected *Culex* mosquitoes where yellow fever exists as an epidemic and do not take the disease. Why non-immunes can be exposed for days and months to yellow fever, and that, too, in the presence of infected *Culex* mosquitoes, and not take the disease, is beyond our ken to explain. It is strange how they do it, but they do.

An editorial in *THE JOURNAL* of the American Medical Association, Feb. 23, 1901, well and truly says:

The experiments of Drs. Reed, Carroll and Agramonte make a great advance in our knowledge of yellow fever. . . . For them to be accepted as conclusive, however, and as overthrowing at once all former notions, is not exactly the scientific course. . . . The facts already obtained must guide us to others. In the meanwhile, it would be foolish to think of neglecting all hitherto accepted safeguards against the disease.

Major Havard, Chief U. S. Surgeon, Division of Cuba, in his report to the Surgeon General, U. S. Army, July 10, 1900, says:

Our increased experience with yellow fever has shown us that there is much about the nature, development and communicability of the contagion of which we are ignorant. The laws governing this disease have not been discovered. It continues to strike when and where it listeth, regardless of our most reasonable expectations, and best hygienic measures.

The Major is emphatically right in this statement. Therefore, as we do not as yet know the specific cause of yellow fever, nor the numerous and varied means by which it may and can be transmitted, we should continue to use every possible precaution against it in our southern states.

That the mosquito is one great medium for its transmission we know, and we may in the near future learn of other means of its transmission and be able to combat them. That others exist the careful study of epidemics of yellow fever of the past will demonstrate. Its erratic and inexplicable movements in an infected district can not be accounted for on the mosquito-theory alone.

As to whether the mosquito is the only intermediate host for the transmission of malarial fever: the majority of our profession are convinced that it is not. We do not know any more about the laws that govern the transmission of malaria than we do of those that relate to yellow fever. We know what the malarial parasite is when developed in the human blood; but what it is outside of that and the laws that govern it are yet unknown. Lavern, a French army surgeon, in 1880, claimed to have discovered the causative micro-organism of malaria outside of the human body, and after further investigations, in connection with a few persons in different parts of the world, decided that it could not be fully developed so as to produce malarial disease in the human being except through the stomach of the *Anopheles* mosquito, and then through the bite of that insect produce malarial fever in the human being. No doubt much, if not the entire, theory of Lavern will soon be bottled up and placed on the dusty shelves in the laboratory of bacteriologists—to keep company with the *Sanarelli* bacillus.

In the transmission of malarial diseases by the mosquito the same law exists that does in yellow fever. The mosquito must first bite a person afflicted with malarial fever, and then in from eight to twenty days—average time two weeks—she can transmit the disease to a healthy individual. Therefore, from every community some one must go to a place where malarial diseases exist, let the infected mosquitoes bite him, contract the disease, return home, invite the mosquitoes to come and feast on his blood, then send them forth on a biting mission to his neighbors, and thus spread the disease.

Can any one who has studied the history of malarial diseases, or had practical experience in malarial districts, for a moment believe that malarial fever in former times could have thus been transmitted over our

vast prairies, or now in the bottom lands of our rivers and the swamps of the north and the south by the mosquito alone? Most certainly not! Especially when we take into consideration that it is a well-established fact that mosquitoes, as a rule, go but a short distance from their breeding places, sometimes but a few hundred feet—average distance not to exceed half of a mile—and that in olden times, and even now in our swamp regions, the settlements were and are, scattered—often with miles intervening between them—with but little if any communication one with another.

Many of the experiments that have been made by investigators in different parts of the world during the past few years, which are claimed to have established the mosquito as the only intermediate host in the transmission of malarial diseases, were of a similar character to those made by the Cuban board on yellow fever, and are not conclusive. For it is well known that many persons living in malarial districts can be, and are, exposed year after year to every possible means of contracting malarial fever—through the atmosphere, water and the mosquito—and yet remain in perfect health; and that healthy persons from non-malarial districts can spend months where malarial fevers are prevailing—mingling with the sick and being exposed to every possible means of contracting the disease—and not have a symptom of malarial trouble. Thousands of persons living in malarial districts can testify to the truth of this. The writer, who has had years of experience living in malarial districts, both before and since he became a physician, can most positively vouch for the truth of every statement here made.

THE BACTERIOLOGY OF CYSTITIS.*

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In the light of present advances in the real causes of cystitis, no one who is a student of progressive medicine will or can ignore the foreground bacteriology has taken in cystitis as other diseases, and bacteriologic investigation has proven that all cases of cystitis are due to infection of pathologic bacteria, even though trauma may first be given that organ from internal or external sources. Normal urine is free from all bacteria, whereas urine contained in the bladder under any diseased conditions of the urinary tract must necessarily contain pathologic and non-pathologic bacteria.

In cystitic urine, as a rule, both cocci and bacilli are present; either one may exist in excess of the other, both exist equally or only one form of bacteria be present. Among the cocci present are the *Staphylococcus pyogenes aureus*, *albus* or *citreus*, the *Micrococcus ureæ*, *Sarcina urinæ*, the *Uro-bacillus liquefaciens septicus*, the *Streptococcus pyogenes*, the *Zooglæa* masses and the *Gonococcus*. The bacilli are usually the *coli communis*, the tubercle and in cystitis during the middle or latter end of a typhoid attack the Eberth bacillus. Thiogenic bacteria may be present, whose peculiar function is to convert sulphuretted hydrogen into more potent compounds of sulphur, and play no small rôle in cystitis. The pathologic bacteria that are factors in most cases of cystitis are the colon bacillus, the different varieties of staphylococcus, the streptococcus, the tubercle and the gonococcus. The bacteria may invade the bladder mucosa from the meatus, urethra, or the blood may contain certain bacteria, which is true of pyemic and sep-

ticemic infections, and cystitis supervene from these conditions. The bacteria may descend through the ureter directly from the kidney, or penetrate the bladder wall from the intestine, as sometimes occurs, for the colon bacillus has been found in the blood during an attack of enteritis.

Instrumentation may frequently cause infection, even though performed under almost or seeming perfect asepsis. Vulvovaginitis in children, proctitis also, often produce cystitis, due directly to an invasion and infection of the mucosa by the bacteria in the vulvovaginal secretions, aided, perhaps, by the careless hygiene of children and the common habit of titillation of the external parts. The resisting power of the bladder mucosa against bacteria is lessened by any condition producing congestion of the bladder. This is proven by the congestions following contusions or lacerations of the urethra during labor, or after a sudden suppression of the menses from any cause excepting pregnancy. At one time the mucosa may be proof against the infection of bacteria, at another time the condition may be reversed, and an infection from certain bacteria produce an acute cystitis. Urine containing cystin has been considered infectious, during which condition of cystinuria certain bacteria produce a metabolic condition in the mucosa and muscular wall which results in an infiltration or hyperemia to a lesser or greater degree.

In the simple non-suppurative cystitis, caused by non-pathogenic bacteria, the urine is decomposed by these bacteria and produce a condition known as bacteriuria, but do not penetrate the mucosa. The streptococcus does not decompose urea, whereas the staphylococcus in most varieties do, and are present in alkaline urine. The saprogenic bacteria are not factors in the non-suppurative cystitis, and only rarely are present in the suppurative form, then in necrotic conditions. A group of bacteria, saprophytic in action, are the nitrifying and denitrifying bacteria, whose function may later produce ammoniacal urine, or add to it, when caused by other before-named bacteria. When the urine is ammoniacal, the nitrifying bacteria if present, oxydize ammonia into nitrous acid, and under reversed conditions the denitrifying bacteria, if present, convert nitric acid to ammonia and nitrous acid. In cystitis zymogenic bacteria rarely if ever enter into the fermentation process, as they do in beer, wine, butter and cheese manufacture, from whose bacterial action the necessary fermentation must result to produce these domestic articles of commerce. The *Proteus of Hauser* acts decidedly on urea, produces ammoniacal urine and may often be found in such urine caused by other bacteria. The *Proteus vulgaris* is often found in urine and is an important factor in the causation of pyelonephritis, as these bacteria descend with the urine into the bladder and find a host in the mucosa. In the suppurative cystitis the urine, which may be acid from the *Bacillus tuberculosis*, may also contain the *Bacillus coli communis*. Ammoniacal urine may contain other than decomposing bacteria, may contain only the *Bacillus coli communis* due to outside infection, as by instrumentation or other procedures by the patient. When ammoniacal fermentation of urine occurs it is not due to the *Micrococcus ureæ*, but results from the then or pre-existing cystitis in less or greater degree from other bacteria. In ammoniacal urine cystitis to a less or greater degree precedes the ammoniacal condition, oftentimes from the action of thiogenic bacteria on urea, previously mentioned. The acid urine in cystitis is rarely, if ever, caused by instrumentation. In some

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forms of cystitis the alkalinity of the urine is due to certain bacteria which decompose urea, such as the *Bacillus pyocyaneus*, with or without the aid of the *Bacillus coli communis*, and even when the latter bacillus is present in large numbers.

The *Bacillus tuberculosis* plays an important rôle in cystitis, due generally to a secondary infection from pus, as in a tubercular kidney or tuberculosis of the urinary tract, in which the pus infected with the *Bacillus tuberculosis* is washed down through the ureter to the bladder mucosa. Not infrequently an ulcer of tubercular origin gives direct infection to the mucosa at a point remote from the ulcer. Disease of the anus, rectum or colon is often the cause of cystitis, as the pathologic bacteria migrate directly through the bladder wall. Cystitis in children is usually caused by the *Bacillus coli communis*; the invasion announced by pyrexia of an uneven course, followed by frequent, painful urination and the presence of blood more or less in the urine, which is subsequent to the marked vesical tenesmus. The urine voided under these conditions will exhibit mucus, pus cells, epithelial cells, blood cells and the *Bacillus coli communis* in large numbers.

The gonococcus as a primary cause of cystitis is not common, but most frequently produces prostatitis, but when cystitis is caused by gonorrhea the other bacteria will be found as coexisting with the gonococcus as factors in the causation. The *Streptococcus pyogenes* may invade the bladder from a nearby suppurating process, which is spreading in character, or the *Staphylococcus pyogenes aureus* may, and often does, penetrate the tissue of the bladder from a circumscribed abscess formation or a pocket of pus near the bladder. Ischiorectal abscess has produced cystitis, due to the *Staphylococcus pyogenes aureus*, and the streptococcus was found present also, proving the penetrating powers of the bacilli. A pyosalpinx, or a suppurative peritonitis, pyelitis or a pyelonephritis may liberate the staphylococcus or streptococcus directly into the bladder or urinary tract.

In pregnant and non-pregnant women the vagina and cervix uteri are hosts to many forms of bacteria. Often the secretions contain streptococcus of a saprophytic nature, that become virulent under certain conditions of less resistance by the mucous membrane, migrate into the bladder, lodge in the mucosa and produce a form of cystitis occasionally met in gynecologic practice. In uterine displacement, causing congestion, hyperemia, or even hyperplasia, the *Streptococcus pyogenes*, the *Staphylococcus pyogenes aureus* or *albus* have frequently been found in the vagina, at or near erosions of the cervix, ulcers of the vulva or vaginal wall, which have caused an attack of cystitis. Such a case came to the notice of your essayist last March, which occurred in the practice of Dr. Houseman, Fostoria, who sought a bacteriologic examination of a urine, which disclosed the *Staphylococcus pyogenes aureus*, *Streptococcus*, *Bacillus coli communis* in large numbers, from which colonies were started, cultures made and kept alive by transplantation. The growth of the *Bacillus coli communis* from this urine on potato media revealed bacilli of such hearty proportions as to remind one of the "Huntswurst" of the up-to-date sausage factory. That urine also contained *Micrococcus ureæ*, sarcina, tetrads and other cocci.

Now and then, during typhoid fever, a cystitis appears, which is due to the invasion and infection of the Eberth, or *Bacillus typhosus*. Such cases of cystitis occur from the last of the second week to the fourth week of typhoid fever. Occasionally a cystitis will supervene during a relapse of the fever, of short or longer duration,

which is due to the renewed activity of the *Bacillus typhosus*.

A new factor in the bacteriologic causation of cystitis is the *Bacillus dysentericus* of Shiga, the Japanese investigator. This bacillus is the cause of that virulent form of dysentery which has attacked our soldiers in the Philippine Islands. This bacillus varies but little from the *Bacillus coli communis* or the *Bacillus typhosus*, and certainly belongs to the colon family. It has been reported as the cause of a severe attack of cystitis supervening the acute attack of dysentery, when the dysentery becomes of a chronic character. As our soldiers return to this country, bringing cases of the acute and chronic tropic dysentery, these bacilli may in the future be added to the long list of "home bugs now doing business at the old stand." In suspected infection of the bladder by the bacillus tubercle it may be necessary to obtain the urine free from contamination from the meatus, urethra or external parts, which can best be accomplished by sterilized catheter under aseptic conditions. The *Bacillus smegmæ* is apt to contaminate the urine and might be mistaken for the *Bacillus tuberculosis*. The same holds true of the *Bacillus Lustgarten*, the so-called bacillus of syphilis and the bacillus of leprosy, but the latter—so rare in this country—is not a factor in pathologic examinations for *Bacillus tuberculosis*. For ulcerative nodular elevations at the urethral orifice, or in the bladder, the differentiation of the *Bacillus tuberculosis* and the *Bacillus Lustgarten* must be made, but the local and constitutional condition will usually be sufficient to decide between the last two if present, and the method of procuring the urine will greatly decide the possibility of contamination of the *Bacillus smegmæ*. The cystoscope is an invaluable aid in the early diagnosis of vesical ulcers, nodules, etc., and catheterization of the ureters in complex cases may be necessary for a differential investigation. The platinum loop or curette may be utilized, scrapings secured of suspected ulcers or nodules, colonies started, if possible, for the culture and staining differentiation in complex or obscure cases.

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GASTROINTESTINAL PERFORATIONS AND THEIR DIAGNOSIS.

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(Concluded from p. 833.)

PRESENT ACCEPTED METHODS. B. EXPLORATORY LAPAROTOMY.

So we see there are but two recognized methods of arriving at a diagnosis of perforation, i. e., awaiting peritonitis or performing laparotomy. The former is unreliable and of little value; the other, while it may be of great value, is of considerable real danger. As to a choice between them the consensus of opinion is in favor of the latter. Fewer cases will die after performing an exploratory laparotomy on all suspected cases than will be lost after awaiting the development of a peritonitis to corroborate the diagnosis. By awaiting the symptoms of a peritonitis in all such cases some few will not develop them and will recover without being exposed to all the dangers of an unnecessary major operation. To perform laparotomy in all such cases will of necessity result in some few being needlessly exposed to the many dangers of a major operation. But in the first instance the chances of a satisfactory outcome are as

small as is the danger of doing an unnecessary operation in the second. Certain cases undoubtedly do recover without operation, after penetrating wounds of the abdominal wall. But the vast majority of such cases are those uncommon instances in which a bullet enters the peritoneal cavity and by pure chance fails to injure the gastrointestinal canal.

Dr. Loomis,³⁵ in discussing Dr. Fitz's paper, said: "I do not remember to have seen a single recovery after there was unmistakable evidence of intestinal perforation."

Mr. Makins, speaking of gunshot wounds of the small intestine which occurred during the Boer war, says: "In the majority of cases which recovered spontaneously the injury was not of a perforating nature, and that in five cases in which the injury was certainly diagnosed in the hospital death occurred."

Flagg¹⁶ reports a case of penetrating gunshot wound received in the Philippines in which exploratory laparotomy was performed and no perforation found, the patient recovering uneventfully.

Robinson²¹ cites a case of penetrating wound of the abdomen on whom laparotomy was performed with no injury to the intestine found. Patient recovered. Such a happy ending is rare and can not be counted on; the probability of nonperforation occurring is not great, for Neff³⁶ says: "When the diagnosis of perforation is made the viscera will not escape injury in more than 4 or 5 per cent. of the wounds."

So in the absence of any method of definitely determining the true state of affairs it is better to consider all cases as are the 95 per cent. As we do not know which are included in the 5 per cent., we had better disregard the minor per cent. entirely. Cases in which undoubted perforation of the gastrointestinal tract has occurred and recovery followed, without any operative interference, are quite uncommon. The chief method of nature in such cases is by the establishment of an artificial anus, or a fecal fistula. In other cases the difficulty exists in differentiating those cases in which the intestine is injured from those in which it escapes damage; as a rule, in the absence of an autopsy, all cases of recovery following penetrating wounds of the abdominal wall are considered as cases in which the intestine escape injury. In this connection Makins is quoted as saying: "Wounds of the intestinal tract showed themselves capable of spontaneous recovery in a certain proportion of cases." But we are not told how he made a positive diagnosis of perforation in these cases which were not operated on and which recovered.

One of the earliest cases in which undoubted injury to gut was followed by recovery without operation is recorded by Littre in 1705, and is referred to by John Bell in his "A System of Surgery," Edinburgh, 1826. It is the case of a madman who stabbed himself with eighteen wounds in the belly, and of these eight penetrated the abdomen; they were made with a sharp-pointed knife. The fever, pain and swelling and difficult breathing, with vomiting and purging, proved them to be dangerous wounds; vomiting of blood discharged by the stool proved that the wound touched the stomach and the intestine; yet desperate as this case appeared, in two months the man had entirely recovered. His madness came on him again and about eighteen months after he threw himself from a high window and died. On autopsy it was found "that the jejunum just below the stomach had been injured with a cut half an inch in length across the gut; the right side of the colon had been injured with a cut one inch in length, the scar

which it left being a half inch long." This is of interest and value in showing to us that it is possible for such a case to recover without surgical intervention. We will not consider the possibility that these scars might be the result of some ulceration from within, probably caused by a foreign body. As the man was insane there is a chance that foreign substances might have been swallowed, or that the wound of the knife might have injured the outer coats of the intestine alone, not including the mucosa, and so not forming a perforating wound; but, granting the explanation given by the author that the scars were the result of stab wounds inflicted eighteen months previous, the question remains, how many such cases would recover under similar treatment and how many similar cases would recover after laparotomy and enterorrhaphy? The fact that such a case may possibly recover without surgical interference does not justify one in allowing others to die without attempting to repair the damage.

Such an outcome is usually explained by the establishment of a localized peritonitis which causes omentum or neighboring loop or loops of the bowel to become attached to the site of the perforation and so occlude the opening, preventing extravasation or extension of the inflammation. Such a favorable termination is uncommon and can not be depended on. It may occur in small punctured wounds (as in experiment No. 10), but the size of the intestinal perforation can not be gauged before seeing it. The size of the penetrating object makes no difference, for a small bullet by burrowing obliquely along the convex border may give rise to an opening of comparatively enormous size.

The stopping up of a perforation by the protrusion of the mucous membrane can not be depended on. In all large wounds it everts and so prevents formation of adhesion to serosa; this protrusion forms a mucous canal connecting the septic lumen of the gut with the free peritoneal cavity. The lumen of this canal may be small, but a large lumen is not necessary to allow of the escape and passage of bacteria.

In gunshot wounds and punctured wounds of the abdominal wall the first indication is to ascertain whether or not the abdominal wall is perforated. It is impossible in many cases to tell whether there is an opening in the peritoneal sac from the apparent course the bullet has taken, or from the symptoms which may develop, such as shock, tenderness or muscular rigidity, for all these may be present and yet there be no opening in the peritoneum.

The method of arriving at a diagnosis of penetration in use by the best authorities to-day consists in making an incision over the wound and following the course of the bullet, the track being in plain sight all the time, till the peritoneum is found to be intact or penetrated, when the wound is treated accordingly, either proceeding and doing a laparotomy or closing the wound.

The older, more common and more dangerous method of probing is still used considerably. The objection to the use of the probe is the danger of forcing infectious matter deeper into the wound or even into the free peritoneal cavity; this, of course, can be done with a surgically clean probe as with one not so. All bullet wounds may be infectious, and hence promiscuous probing will only add to the spread of the infection; and again, it is working in the dark; one can not see where the instrument is being forced and damage may be done. It is often unsatisfactory, as the muscles may contract on the track of a bullet and prevent the passage of a probe. The finger has been proposed as a substi-

tute for the ordinary probe. This animated probe will in many cases be too large and will force and spread infection in the same manner as the other, its only advantage being the addition of the sense of touch, which, of course, will be of considerable moment in many cases.

Caution against too much probing in bullet wounds may be found as early as 1845 by Gibson³⁷ as follows: "The surgeon should make it a rule, when called to a gunshot wound of the abdomen, to spare the probe and finger as much as possible; such examinations thoughtlessly made can do no good and have been the cause of great mischief." And in 1898, by Senn:⁵ "A penetrating wound of the abdomen should never be probed, either for diagnostic or therapeutic purposes." Yet in a recent number of the *Annals of Surgery* we find LeConte reports a gunshot wound of the abdomen in which he says: "And a probe refused to pass beyond the latissimus aponeurosis." In commenting on this case and gunshot wounds in general the same speaker says: "It has been my practice to treat the tract of the bullet as septic until it has proved itself otherwise." We would ask then, why probe?

Other methods have been advocated, such as the injection of hydrogen gas or peroxid of hydrogen into the wounds; if the passage of the gas was obstructed it was supposed that the wound did not communicate with the free cavity, and if, on the other hand, the gas did not cause any distention of the track and met with no obstruction, it was supposed to have passed into the abdominal cavity. But these have been found to be inaccurate and dangerous measures, and so are practically abandoned at the present time.

If the wound is penetrating the probability that damage has been done to the abdominal contents is great; as great as 95 or 96 per cent. by one author. But, on the other hand, we find Makins saying that "unless the intestine was struck in such a direction as to render lateral displacement an impossibility the gut often escaped perforation."

In this connection we call attention to the frequent escape of the intestine from injury in cases of stab wound as compared to gunshot wounds. This may be explained by the comparative slowness of the stab wound which allows the intestines to escape from the path of the knife.

The operation of "Paracentesis Abdominalis," so frequently performed yet never damaging the intestine unless there be adhesions between the visceral and parietal peritoneum, at site of puncture, serves also as an example and tends to strengthen the proposition that, in certain cases, the intestine may get out of the path of even a bullet. But, again showing the differences of opinion, the late Sir William McCormac said: "The bowel is nearly always perforated, feces are extravasated and very frequently there is some other complication as well."

It would seem that in the vast majority of cases evidence of penetration is sufficient provocation for laparotomy. Parke says: "The treatment of penetrating wounds of the abdomen requires exploration." But Senn, as late as 1898, says: "Quite recently the assertion has been made by several prominent surgeons that laparotomy should be performed in all cases where it can be shown that penetration has occurred. It must, however, be admitted that in the absence of serious visceral lesions penetrating wounds of the abdomen are injuries from which the patients are very likely to recover without operative treatment, and that when such patients

are subjected to laparotomy death may occur solely in consequence of the operation. Clinical experience and the result of experiment show conclusively that laparotomy should not be performed because a bullet has entered the abdominal cavity, but that its performance should be limited to the treatment of intra-abdominal lesions, which, without operative interference, would tend to destroy life." Hildebrandt, Berlin, at the Congress of German Surgeons, April, 1902, in discussing penetrating wounds of the abdomen and their treatment, says: "When the diagnosis of perforation is made laparotomy should be performed immediately." In other cases he advises expectant treatment, performing the operation only when necessary.

Then there are certain and not uncommon conditions under which we may have perforation of the gastrointestinal tract in which the abdominal wall shows no evidence of penetration or even injury, as ulcerations and contusions. In such cases especially is there a crying need for some method of diagnosis other than those two above enumerated.

With our present aseptic technic exploratory laparotomy is almost devoid of danger, so that if no perforation is found in the majority of cases no damage will have been done, or, as Cushing says: "Nevertheless, I believe much less responsibility was associated with an explorative laparotomy than with the risk of neglecting a perforation until signs of peritonitis should occur." Or Richardson, who says: "An objection lies in the possibility of unnecessary operation, for the chagrin is great, though the danger is slight, when the patient has been subject to an unnecessary risk." Scudder,³⁸ in this connection, says: "Indiscriminate early exploratory operations for diagnosis are to be deprecated; it is certainly better, however, to have operated many times and found no lesions than even once to have neglected operating where it might have saved a life."

But in each and all of these quotations there is a tacit admission that it is a question of choosing between two evils, and all are agreed as to which is the lesser. And the lesser evil is evil because it is not absolutely free from danger. Explorative laparotomy on even perfectly normal individuals is not free from danger. Dr. Keen, at the Denver meeting, challenged any one in the room who believed he could do 100 abdominal sections on well patients even and not have a 2 per cent. mortality, and no one took it up. At the Columbus meeting, when criticised by Dr. Morris, he said: "I am perfectly well aware that several of the best surgeons can show less than 2 per cent. mortality, but I still maintain that in the hands of the average man the mortality will be 2 per cent. or higher."

The use of a local anesthesia reduces but one source of danger; the other possible causes of a fatal termination are still present. It is this mortality rate, small as it is; the knowledge that exploratory laparotomy is not devoid of danger; the fact that an unnecessary laparotomy may terminate fatally, that has led to many attempts at some other method of diagnosis, if not absolutely dangerless, perhaps of less danger.

In an editorial in THE JOURNAL A. M. A. we find the following: "Any operation which does not better the condition of the patient must be regarded as a therapeutic error. Progress in the future is likely to depend much more on the discoveries which shall make surgery less necessary than to the opening of new fields for surgical treatment. The advance should be in the direction of limiting these unnecessary and harmful operations, for the wisdom of the surgeon should serve as well

to restrain him from operating as to enable him to operate successfully."

NEW METHODS AND EXPERIMENTS.

A suspected perforation, in a case of typhoid fever occurring in the writer's practice, and the lack of conclusive evidence sufficient to justify an operation, even after the aid of consultation with that master of diagnosis, the late lamented Christian Fenger, led to a train of thought which might be expressed in the following manner:

THE SURGEON'S SOLILOQUY.

To operate or not to operate, that is the question;
Whether it is nobler in the mind to suffer
The slings and arrows of a suspected perforation,
Or to take up the scalpel, against our doubts,
And by exploration—end them.
To cut, to explore and perchance not find a perforation.
Ah, there's the rub. Thus uncertainty does make cowards
of us all.
To explore, to cut, to laparotomize;
And by so doing find a perforation, and thus snatch
A human being from an untimely grave.
This is a consummation devoutly to be wished.
To test, to prove, to satisfy oneself,
Without the aid of the uncanny scalpel;
To explore without a celiotomy,
To find a reaction, by the aid of chemics,
That would demonstrate beyond the peradventure of a doubt.
That perforation did exist,
What an advance were that my fellow surgeons.
To test, to prove, to answer questions,
From the *x*-ray hidden,
To explore and lay bare the minutest perforation
By the aid of a reaction
Is a want, and the want has long been keenly felt.

And this, in turn, led to an effort to arrive at a means of diagnosis in cases of suspected perforation without the dangerous procedure of a laparotomy and before the development of peritonitis. The available literature was consulted and a line of experiments mapped out, these experiments to begin with the simpler and more readily discernible chemical reactions and from these on to the more complicated and proportionately more valuable procedures that would include the use of the spectroscope, microspectroscope, the polariscope and all available means that might shed even a ray of light on this problem. But circumstances led the writer far from the facilities of the complete laboratory, with a result that but few experiments were performed, and these of a more simple nature. The results, while not absolutely conclusive thus far, show the possibilities of the modern laboratory when intelligent inquiries are made of it.

The experiments have been, in principle, the injection of filtered air or normal salt solution into the abdominal cavity, the withdrawing of the same and examining it for some substance found normally in the gastrointestinal canal and which is not found in the normal peritoneal cavity. Or, to put it in as few words as possible, if there is a perforation will not a delicate chemical reaction detect it?

When any new method of treatment or diagnosis is presented the first indication is to demonstrate conclusively that no harm or damage will follow its application; the second, that it will accomplish some good.

As to air, if no perforation is present will the injection of filtered air into the peritoneal cavity do any harm? Murphy has demonstrated the innocuousness of nitrogen when injected into a large serous sac, the pleural cavity. Senn claims that no evil effect follows the escape of hydrogen gas from the bowel into the free

cavity. G. Kelling³⁹ has recommended tamponing the abdominal cavity with air in cases of threatened internal hemorrhage, and in his method of celioscopy⁴⁰ has still further demonstrated the lack of any bad symptoms following the injection of air into the abdominal cavity. In the writer's experiments, in three instances (Exp. 3, 10 and 5) the abdomens of dogs were filled with filtered air and no evil effects of any description was noted, the distention and tympany disappearing in from two to six hours. On the contrary, in one instance in which the animal was given too much anesthetic and seemed to be about dead, forcible distention of the abdomen with air seemed to resuscitate the animal. Once again, during the same operation, the animal apparently stopped breathing and pulsation of the heart could not be heard. Care was taken to ascertain these facts. Injection of air was again resorted to, with a return of pulse and respiration. A third time the animal collapsed and a repetition of the measure failed to restore him. This was in all probability merely an apparent death, for in two other cases the animal died from the anesthetic, while the injection of air into the abdominal cavity and all other known means failed to bring back life.

On the other hand, if there be a perforation of the gut and examination of the aspirated air reveals the fact, operation will be performed at once.

As to the injection of fluid into the cavity, the normal salt solution is superior to sterile water, in that it does not act as an irritant to the peritoneum and cause the destruction and removal of the endothelial cells as the plain water has proven to do. T. J. Maxwell⁴¹ reports two cases in which he irrigated the abdominal cavity with a normal salt solution, at intervals of from four to six hours, as temperature and pulse indicated, for four or five days, with no evil result as a consequence. Laplace⁴² has demonstrated that the peritoneal cavity stands with perfect safety a continuous irrigation with normal salt solution at a temperature of 100 F. during 74 hours.

In the absence of perforation the injection of fluid into the cavity will cause no infectious matter to be spread throughout the sac because there is no infection present. The result of this fluid in the peritoneal cavity will be the same as that which follows transfusion; it will become rapidly absorbed and will act as a stimulant to a flagging circulation and at the same time serve as a most rational treatment for shock and collapse.

If there be a perforation, and examination of the fluid reveals the fact, laparotomy will be instituted at once, and as it is an almost universal practice to flush out the cavity in such cases, this flushing will have been begun before the operation and have acted as a stimulant, so enabling the patient to stand the operation better than without it. By this method no new infectious intestinal contents will be forced into the general cavity, as may occur when the rectal insufflation is practiced. To be sure, the contents which have already escaped may become disseminated throughout the peritoneal sac, but whether it is better for the patient to have 1,000 germs in one locality or one germ each in 1,000 different locations is an open question, regarding which J. G. Clark,⁴³ who has made a masterly study of the subject, says: "It may appear to some of my readers that the peritoneal infusions of normal salt solution, in cases in which infection is suspected, is to condemn the patient to certain septicemia or even pyemia through the wide distribution of the microorganisms. On the contrary, we believe this very action is prevented." He bases his argument, very rationally it seems, as follows: "Given

a minimum amount of peritoneal infection it is infinitely better to distribute it at once, before the microorganisms undergo manifold sporulation, than to hope for its elimination after it has gained virulent headway through stagnation within the abdominal cavity. By at once distributing a minimum amount of infectious material generally throughout the body the microorganisms are promptly placed in the most favorable situations for their destruction and elimination."

From the above we conclude that the injection of the air or water into the abdominal cavity in the absence of a perforation is harmless, and in the presence of perforation is likewise devoid of danger.

There may be cases of chronic nonperforative peritonitis in which the aspirated air or liquid may reveal substances, contained normally in the lumen of the gut, for Fitz says: "A fecal odor may be present in the purulent exudate, which has remained for some time in contact with the large intestine, although there be no perforation on the bowel." And it is a well-known fact that the bacteria, especially the colon bacilli, may pass through the nonperforated intestinal wall.

Cutler and Elliot²¹ report a case of typhoid in which the symptoms pointed to a perforation and laparotomy was performed. Peritonitis was evident. No perforation was found, but two grayish patches were almost ready to slough. These were inverted by suture and the patient recovered.

G. Poser and J. Cohn⁴⁵ claim, after experiment, that there is no doubt that under certain conditions the intestinal wall is penetrable by bacteria. They injected *Micrococcus prodigiosus* into the rectum of dogs and then sealed the anus. After two days the animals were killed and the prodigiosus was found in the peritoneum. It is probable that a perfectly normal bowel opposes their passage.

This process was called propagation by Monad and Van Vertz.²⁶ But these conditions are not found in acute abdominal emergencies, and when found in subacute or chronic conditions demand laparotomy as their treatment. To satisfy ourselves that such a condition will not be found in acute nonperforative peritonitis one experiment was carried out as follows:

Large bull dog. Anesthesia, shaved and cleansed. Incision, median line, opening the abdominal cavity. A small piece of gauze saturated with pus from an infected finger was inserted into the cavity and abdominal wound closed. Twelve hours after, when animal showed evidence of peritonitis (tyimpanites and temperature), normal salt solution was injected and withdrawn. This fluid, on examination for sulphur, ammonia, indol, nitrates, bile, peptone, proteoses, starch, sugar, etc., gave a negative result.

In the first experiments it was our aim to utilize the principle by means of which plumbers locate a leak in the sewerage; that is, by exposing white blotting paper saturated with lead acetate to the suspected air, which, if contaminated with any compound of sulphur, notably H_2S , will convert the lead acetate into lead sulphid and cause the white paper to become black. As the lower bowel at least contains sulphur, and the normal peritoneal cavity contains none, it was hoped that by this means a perforation of that portion of the alimentary tract might be discovered. With this object in view experiments were conducted as follows:

EXPERIMENT 1.—Dog. Anesthetized, shaved and cleansed. Abdominal incision, median line. Rectum brought into abdominal wound, which was incised at its convex border for a distance of two inches. The mucosa everted and contents escaped, after which the bowel was returned to peritoneal cavity and the abdominal wound closed. Twenty-four hours after the re-

ceipt of injury to gut the dog was found alive, but in very bad condition, tympanites marked. Animal again anesthetized and cleansed. Gas escaped spontaneously from the abdominal cavity after the induction of trocar. This gas was conducted by means of a rubber tube to the bottom of a test tube containing a saturated solution of lead acetate, which solution was turned black in one minute.

EXPERIMENT 2.—Dog. Anesthetized, shaved and cleansed. Abdominal incision, median line. Rectum brought into wound and incised on convex border for distance of $1\frac{1}{2}$ inches. Mucosa everted and contents escaped. Injured bowel returned to peritoneum and abdominal wound closed. Twelve hours after receiving the injury the animal was again anesthetized. Two trocars were inserted into abdomen, one below the xiphoid cartilage, and the other above the pubes, and filtered air forced in one trocar. After a slight distension of the abdomen this air made its escape from the second trocar, and upon being conducted to the bottom of a test tube and allowed to bubble through a solution of lead acetate, it shortly turned the lead acetate solution black.

EXPERIMENT 3.—Similar to No. 2, and differed only in that the filtered air was forced through the abdomen three hours after the injury instead of twelve hours as in No. 2. The same positive reaction (lead acetate solution turned black) resulted in this case.

EXPERIMENT 4.—Similar to No. 3, except that the air after passing through the contaminated peritoneal cavity was allowed to bubble through a solution of iodized starch. As a result this blue solution was changed to a colorless one.

EXPERIMENT 5.—Differed from Nos. 3 and 4 in that instead of using lead acetate or iodized starch as a test solution the escaping air was passed through Nessler's reagent, which was promptly turned yellow, indicating the presence of ammonia.

EXPERIMENT 6.—To demonstrate that such reactions are not confined to the lower animals, human feces in dilute solution (oz. to pint) of sterilized water were placed in a large bottle and shaken. Filtered air was now forced through this solution and allowed to pass through a solution of lead acetate, which was darkened. The lead solution was replaced by one of iodized starch and this in turn was bleached, and on substituting Nessler's reagent for the starch it was changed to a yellow color.

EXPERIMENTS 7, 8 and 9.—To exclude the possibility of these reactions occurring after passing the air through a normal peritoneal cavity, and at the same time to determine whether or not there were any evil effects to follow the procedure, the experiments were similar.

Dogs anesthetized, shaved and cleansed. Two trocars inserted, one below xiphoid cartilage, and the other above the pubes. Filtered air was forced through one trocar into abdominal cavity. After slight distension air escaped from second trocar, and was led into a solution of lead acetate, which was unchanged after the air had bubbled through it for five minutes. Similar negative results were noted after the substitution of the iodized starch solution and the Nessler's reagent, for the lead acetate. The trocars were then withdrawn, leaving as much air as possible in the abdominal cavity, and the punctures sealed with collodion. No evil effects were noticed and the next day the tympanites had entirely disappeared, and the animals seemed perfectly normal in every respect.

EXPERIMENT 10.—Dog. Anesthetized, shaved and cleansed. Abdominal incision, median line. Jejunum brought into wound and incised for $1\frac{1}{2}$ inches at its convex border. Gut replaced in cavity and abdominal wound closed. Twelve hours after receipt of injury tympanites and peritonitis present. Air was forced through the cavity, and then in turn through lead acetate, iodized starch solution and Nessler's reagent with a negative result in each instance.

EXPERIMENT 11.—Dog. Anesthetized, shaved and cleansed. Abdominal incision, median line. Rectum brought into wound. Two trocars inserted into this viscus six inches apart, and air forced through them, the gut being compressed above and below the trocars with Murphy clamps to prevent the air from

filling the entire tube. This air after its escape readily turned the lead solution dark. The same process was repeated in the ascending colon with a like positive result. It was also performed in the small gut, and in the stomach with a negative result. After passing the escaping air through the solution for five minutes no change in color could be detected. The abdominal wall was now saturated with the intention of making tests from the free cavity on the following day, but at that time the animal presented no external evidence of peritonitis, and instead of doing so, rapidly recovered.

This experiment is instructive in demonstrating the necessity of more than one test, as a different substance or substances must be looked for in cases of perforation of the small gut or stomach, and also of extreme interest in proving the possibility of spontaneous healing of the gut and recovery without any attempt at closure of wounds by suture or other artificial means. This animal recovered without suture of gut after receiving eight punctured wounds of the alimentary canal; the wound in each instance being made by a trocar about one-eighth of an inch in diameter. It is worthy of note that in none of these wounds did the mucosa evert, which in all probability accounts for the union and recovery.

While the possibilities of air as a source of information were far from being exhausted, a few tests with liquid were deemed desirable. The observations of Maxwell and Laplace demonstrated conclusively that no evil effect may be expected as a result of the free application of normal salt solution to the peritoneum of human beings, and rendered it useless to prove the proposition on the lower animals. The first experiment was in the nature of a control, the fluid being examined after its passage through a normal peritoneal cavity, one in which the gastrointestinal tract is nonperforated.

EXPERIMENT 12.—Small bull terrier. Anesthetized, shaved and cleansed. Two trocars inserted into the abdominal cavity, one below ensiform cartilage and the other above pubes. One liter of normal salt solution at a temperature of 110 F. was injected into the abdominal cavity, trocars withdrawn and puncture sealed with collodion; after the expiration of one hour, four ounces of fluid were withdrawn from the cavity and immediately examined for ammonia, nitrates, indol, bile, sugar, starch, peptone, proteoses, sulphur, and sulphates, none of which were found, thus showing that with no perforation these substances will not be found in the solution after its passage through a non-perforated peritoneal sac.

Next an attempt to arrive at a diagnosis of perforation of the large gut was undertaken as follows:

EXPERIMENT 13.—Black and tan cur. Anesthesia, shaved and cleansed. Abdominal cavity was filled with normal salt solution 110 F. through two trocars—withdrawn about four ounces of this fluid into a bottle marked "Before perforation."

After removing trocars, abdominal incision was made, through which the large bowel was exposed. The rectum was incised on its convex border for a distance of about half an inch and then replaced in its normal location in the abdominal cavity and the wound in belly was closed. Twelve hours after the injury to the gut was received the dog was again anesthetized, the trocars inserted once more and through one normal salt solution introduced into the abdominal cavity, through the other a portion of this fluid was withdrawn and put into a bottle marked "After perforation, twelve hours." Examination of these solutions for ammonia was negative in the first, and positive in the second.

EXPERIMENT 14.—Similar to No. 13, differing only in that the normal salt solution was injected into the abdomen three hours after the injury instead of twelve hours as in the previous one. This fluid was allowed to remain in the abdomen for 30 minutes and then about four ounces of it was withdrawn and placed in receptacle labeled "After perforation, three hours," and which, when examined for ammonia with Fehling's reagent, gave a distinct positive reaction.

EXPERIMENT 15.—Similar to No. 14, except that instead of examining the aspirated fluid for ammonia it was treated with sulphuric acid and sodium nitrate, the change of color indicating the presence of indol. By this test, according to Herter, we are enabled to recognize indol even when diluted as much as one part to two hundred thousand of water.

EXPERIMENT 16.—Similar to No. 15, but instead of examining the fluid for indol it was made alkaline by adding sodium hydroxid and then sodium nitroprussiate was added with a resultant violet color. This indicated the presence of soluble sulphids.

EXPERIMENT 17.—Dog. Anesthetized, shaved and cleansed. Incision, median line. Upper portion of the jejunum brought into the abdominal wound and its convex border incised for an inch and a half. The mucosa everted and contents escaped. Bowel put back. Abdominal wound closed. Six hours after injury, normal salt solution injected into abdominal cavity and after remaining for fifteen minutes four ounces were withdrawn, and examined for peptone or proteoses, bile, sugar, starch, with a negative result for all except the biuret test for proteoses.

EXPERIMENT 18.—Same as No. 17, except that in testing for bile, Hays' reaction was utilized and found positive. When powdered sulphur is sprinkled on a fluid containing bile the sulphur gradually sinks. This reaction, according to Beddard and Pembrey, depends on the presence of bile salts alone, and is still given when one part of bile is diluted by 120,000 parts of water.

TREATMENT.

While it is not intended to include treatment at length in the scope of this paper, the diagnosis and treatment are so intimately related it, it would be incomplete without a few words concerning treatment of the condition when found. The treatment may be arbitrarily divided into treatment of the perforation and of the peritonitis.

Treatment of the Perforation.—As to the perforation, its location relative to the portion of the gut involved will be of considerable importance. The wound may be *a*, at the convex border; *b*, at the mesenteric border, or *c*, between these two. If at the convex border a simple suture will be sufficient. If there is any danger of causing a stenosis the wound may be closed transversely to the long axis of the gut (Heinecke, Mikulicz, the so-called enteroplasty). If at the mesenteric attachment the blood supply must be carefully studied and in suturing too much blood supply must not be cut off. Some advocate resection, followed by enterorrhaphy, in such perforations. The presence of the mesentery with its separated serous coverings adds to the difficulty of suturing in this locality.

In through-and-through perforations, i. e., with an opening on both sides of the gut, the danger of stenosis is increased, and if near the mesentery the circulation of the convex portion may be imperiled; so it is usually advisable in such cases to perform resection.

The technic of intestinal suturing will not be dwelt on. The Lembert suture is certainly, according to many writers, fast becoming a thing of the past, and the through-and-through suture with the knot in the lumen taking its place.

When resection is necessary a choice lies between anastomosis with the Murphy button and enterorrhaphy with plain needle and thread. The advantage and disadvantage of each can not be dwelt on here, but it seems that the suture method is again gaining popularity.

Treatment of the Peritonitis.—The treatment of the peritonitis, which is unfortunately present in so many cases, is much more unsatisfactory than is that of the perforation. The practice of flushing out the cavity with normal salt solution is almost universal, and the

leaving of a liter of this solution in the cavity is earnestly urged by many.

The use of hydrogen peroxid, as recommended by Morris, has little to recommend it beside the fact that it spreads the infectious material the same as does the use of normal salt solution, and so allows nature to combat the infectious process at many points instead of at one situation.

The bactericidal property of the nascent oxygen can not be great, for if it were sufficient to kill the germs, such as the colon bacillus or streptococci, it would certainly at the same time destroy the sensitive endothelial cells lining the peritoneal sac.

The postural treatment, with elevation of the head, as recommended by J. G. Clark,⁴⁶ so aiding in the drainage of the infectious material through the diaphragm and into the mediastinal lymph glands, has many enthusiastic advocates, as has the method with elevation of the foot of the bed, as proposed by G. Ryerson Fowler,⁴⁷ which allows the deleterious substances to come in contact with the pelvic peritoneum, which, for some reason, seems more resistant to infection than is that peritoneum at the diaphragmatic portion of the cavity.

The continuous irrigation with the warm normal salt solution for acute general septic peritonitis, was suggested by Laplace⁴⁸ in 1889, at which time he said: "The method has not to my knowledge been used before." And at the St. Paul meeting he again refers to it and mentions cases which have recovered following its use.

We find an article by T. J. Maxwell⁴¹ of Keokuk, Iowa, in which he reports two cases of post-operative septic peritonitis treated by free irrigation of the peritoneal cavity as long as the pulse and temperature demanded it.

CONCLUSIONS.

1. The previous attempts at an early and accurate diagnosis of perforation of the gastrointestinal tract without opening the abdominal wall have not been adopted.
2. There has been practically no improvement in the method of diagnosing such conditions during the past century.
3. The treatment of the perforation *per se* during the last century has progressed to a state bordering on perfection when compared with the older methods.
4. The diagnosis of gastrointestinal perforations is one of the most important unsolved questions in the domain of abdominal surgery.
5. There is no pathognomonic sign or symptom or group of signs or symptoms of perforation.
6. The only positive method of arriving at a diagnosis to-day is to either perform an exploratory laparotomy or await the development of a peritonitis.
7. To await the development of a peritonitis will reveal the diagnosis too late for the most effectual treatment.
8. Exploratory laparotomy as a routine measure will of necessity result in some cases being needlessly exposed to the many dangers of a major operation.
9. Exploratory laparotomy is not a harmless procedure.
10. The consensus of opinion is in favor of exploratory laparotomy as a choice between two evils.
11. The fact that even the most expert clinicians fail to diagnose perforation in all cases and even diagnose such a condition when it does not exist shows the great need of improvement in diagnostic methods.

12. The diagnosis should be arrived at before the treatment of the perforation is complicated by the presence of a peritonitis.

13. The injection of air or normal salt solution into the peritoneal cavity and withdrawal of the same for examination will do no harm.

14. Such a procedure will, in many instances, reveal a perforation before any sign or symptom of peritonitis exists.

15. The treatment of the perforation *per se* is simple and satisfactory.

16. The treatment of the complicating peritonitis is multiple and unsatisfactory. The best treatment is prophylactic, i. e., early diagnosis and repair of perforation before peritonitis has become established.

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PRIMARY ENDOTHELIOMA OF THE GALL BLADDER.*

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NARRATION OF CASE.

History.—Mrs. R., age 65, referred by Dr. W. F. Malone. Usual diseases of children. Appendicitis three years ago. Full recovery. Thirteen months ago loss of appetite and loss in weight. Family history negative.

Present State.—Weight 52 kilo. Emaciation and weakness very marked. Almost complete anorexia. Dull continuous pain over gastric region; slight tenderness over region of the gall bladder. This is only elicited at intervals. Stiller's sign absent. Abdomen is distended to the utmost in both the gastric and umbilical regions. Ten c.m. below the umbilicus the resonance of percussion takes on a lower pitch. (Perussion from above downward.) No stool the last ten days. Patient

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vomits continually, which consists of a foamy, brownish, malodorous mass, made up of fermenting food remnants. Total absence of HCl free or combined. Presence of an immense number of sarcinæ. No Oppler-Boas bacilli. Stomach is emptied by means of the stomach tube; $1\frac{1}{2}$ liters of fermenting stomach contents are brought forth. Gas evolved by fermentation is CO_2 . No lactic acid. After evacuation of the stomach the same is washed with salt solution. Distension over gastric region has now disappeared. The stomach is artificially inflated with air; lower border is found $10\frac{1}{2}$ c.m. below the umbilicus. The partly inflated stomach containing water which is introduced for diagnostic purposes shows the lower border of the stomach 8 c.m. below the umbilicus. Determination by gurgling sound on introduction of air. An attempt to outline the colon by inflation proves too painful and is abandoned. Colonic treatment results in copious stools. Patient feels comfortable. This treatment is continued and the stomach contents are tested daily. After seventh treatment free and combined HCl are evident. Appetite improves and stool every two or three days. All stools contain reduced bile pigments; no blood at any time; never any blood in stomach contents. (Examination according to Weber's method.) In spite of moderately large meals patient continually loses in strength and weight. Percentage of urea ranges from 20 to 28 grams in 24 hours. As soon as a day is allowed to pass without gastric lavage there is rapid accumulation of gas with consequent painful distension of the stomach. This is particularly noticeable when the patient assumes an upright position, or sitting posture. On the seventh day of observation the lower border of the liver is felt for the first time, and a distinct hardening can be felt at the site of the gall bladder. The hardening appears to be in the liver substance. Pressure on this nodular hardening, for instance, on attempting to palpate the gall bladder from below, elicits moderate pain. On distension of the stomach this hardening can not be felt. Never any icterus. Spleen moderately large. The highest total gastric acidity reached was 25, of which 7 were free HCl. After this amount had been reached, the quantity gradually decreased until about two months later it disappeared completely and remained absent until death. Boas' gallstone sign, on pressure pain in region to the right of tenth dorsal vertebra could not be elicited.

Diagnosis Intra Vitam.—Carcinoma of the gall bladder; kinking of the duodenum; enormous dilatation of the stomach.

AUTOPSY.

In the report of the necropsy only such findings will be mentioned as are considered relevant.

Necropsy was performed six hours after death. Protocol, Dr. M. A. Kleinbans. Abdomen tensely inflated. On opening the peritoneal cavity an enormously dilated stomach tensely filled with gas is evident, which had pushed the colon down into the large pelvis. Only a moderate degree of gastroptosis. On turning the fundus and greater curvature of the stomach upward the gas contained in the stomach can be expelled into the duodenum. The pylorus and duodenum are firmly adherent to the dorsal surface of the liver. The pancreas is, to some extent, enveloped in these gastric adhesions. No gall bladder is visible or tangible. In its stead is a circumscribed firm, slightly elastic hardening in the liver substance. Stomach, liver, pancreas and spleen—which latter is not enlarged—are taken out together. Weights and measures of the organs are all within normal limits except the measurement of the stomach. Serial incisions into the liver reveal an ovoid tumor of white color at the site of the gall bladder. This tumor is directly continuous with the serosa of the stomach and duodenum, and also with the pancreas by means of a slightly elastic tissue bridge. Liver substance shows distinct lobulation, increased periportal connective tissue, especially around the larger bile ducts.

Stomach.—Stomach contains about a half liter of undigested food. The mucosa shows no rugæ. The usual petechia on posterior wall; disseminated plaques of smooth, grayish mucosæ, which are diagnosed and proven by microscopy to be

atrophic areas. No bile discoloration of the stomach. No thickening of the mucosa anywhere suggested carcinoma; no ulcers, deep or superficial. Pyloric orifice patent. In the posterior wall of the antrum pylori a hard thickening is seen and felt. It contains crepitating material. The highest point of this elevation is devoid of mucosa. The mucosa is replaced by connective tissue. The thickening is incised, and two gallstones, one the size of a filbert, the other the size of a small pea, are found therein. The gallstones were only slightly faceted and medium hard. The floor of this cavity which contained the stones is formed by the substance of the above mentioned tumor in the liver. The tumor formation had evidently forced the gallstones into their present position. No cystic duct could be made out. Hepatic duct is uninterruptedly continuous with the common duct, and the whole duct is patent. Diffuse fibrosis of the mucosa of this duct. No scar or other mark which might designate the entrance of the former cystic duct. Pancreatic duct is patent and enters the duodenum at 1 c.m. distance from common bile duct. Pancreas moderately sclerosed.

Now, all the length of the intestinal canal is explored, together with the genitalia, uropoietic organs, likewise the contents of the thorax, but no evidence of carcinoma is found.

Heart.—The right ventricle of the heart contained a large marantic thrombus, which had occluded the sinus venosus and branched into the pulmonary artery.

It being a private case, the privilege of opening the cranium was denied.

Anatomic Diagnosis at Time of Autopsy.—Primary carcinoma of the gall bladder; adhesions with pylorus of the stomach, duodenum, and pancreas. Enormous dilatation of the stomach. Cause of death, probably occlusion of the sinus venosus by marantic thrombus. (Patient died with symptoms of apnea.)

After examination microscopically the diagnosis is changed into primary endothelioma of the gall bladder.

DESCRIPTION OF ILLUSTRATIONS.

Pathology.—Figure 1 shows the gross appearance of the tumor located in the lower dorsal aspect of the liver at *a*. The white tumor substance merges gradually into that of the darker liver substance; *b* represents the pylorus and duodenum. The serosa of these two last named organs is seen to be nodularly swollen; *c* shows the increase in the portal connective tissue.

Figure 2 shows the liver and stomach, in order to demonstrate their relative size. It is plainly seen that there is no obstruction of the pylorus, but simply adhesions by means of the serosa. The comparison between the sizes of the two organs, stomach and liver, will at once convey the excessive degree of dilatation of the stomach (*a*). Rosenheim (Krankheiten des Verdauungs-Apparates) states in a differential diagnosis between liver and gastric cancers, that "*Gallenblasen-Carcinome bedingen meist keine Dyspepsie und niemals Ectasie.*" A number of authors, including American and French, have, I think, thoughtlessly, repeated this statement. I have seen five cases of carcinoma of the gall bladder during the last year, four of which showed an immense ectasia of the stomach. Figure 3 represents a transverse section through the whole liver, together with an immensely dilated stomach for comparison. In this case, as in the case of endothelioma (Fig. 2), there was no involvement of the mucosa of the stomach whatsoever, and only a slight, easily separable adhesion of the stomach and the under portion of the gall bladder. In one more case of the four that showed signs of dilatation of the stomach during life, I have performed the autopsy which revealed similar conditions as seen in Figure 3. One case is still alive, but since an exploratory laparotomy was performed I had an opportunity to see the dilated stomach in that case. Rosenheim's statement, therefore, can-

not be considered of any value in differential diagnosis between carcinoma of the stomach and gall bladder.

Histology.—A large number of specimens of tissues of all regions were examined. The liver tissue remote from the tumor shows a moderate degree of increase of the periportal connective tissue with new formation of bile ducts. This suggests interstitial hepatitis. The connective tissue, however, does nowhere invade the lobules proper. Study of the individual liver cells shows them to be fairly normal. Epithelium of the old and new formed bile ducts shows no tendency to atypical proliferation anywhere. The connective tissue immediately

plasm of which takes a deep eosin stain. In some areas these cells are seen to rise from oblong spaces or narrow slits, which I take to be lymph spaces. Where there is a large number of these cells, those marginally situated seem to undergo gradual fibrillation, and it is then extremely hard to make out the dividing line between the connective tissue proper and the tumor cells.

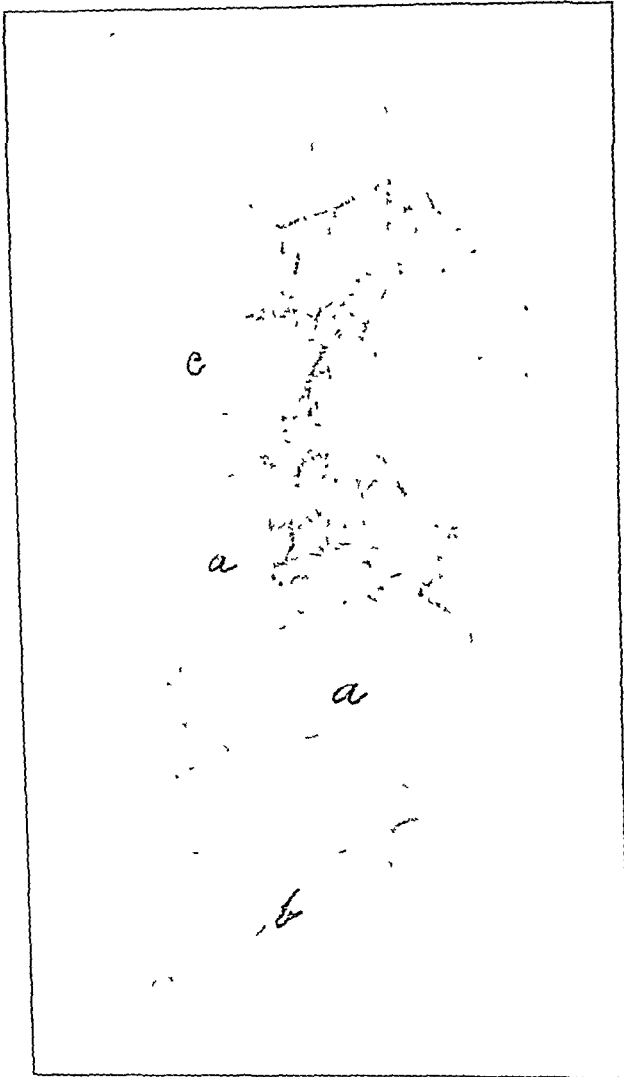


Fig 1—Vertical section through liver. a. Endothelioma b Pylorus c Pericholangitis

surrounding them is in active proliferation (pericholangitis).

In Figure 4 the margin of the tumor is made up of connective tissue containing foci of round cell proliferation (a). The individual liver cells surrounded by this connective tissue formation (b) are entirely normal. The blood capillaries of this liver tissue are slightly over-distended. This congestion is thought to be due to prolonged agony.

Figure 5, from a section taken about $1\frac{1}{2}$ c.m. away from the margin toward the center of the tumor, also shows mostly connective tissue, young and old, but containing strings of polymorphous large cells, the cyto-

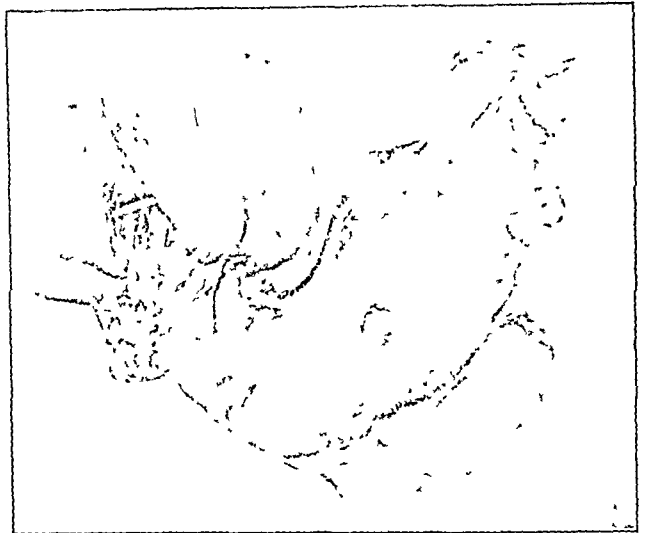


Fig 2—Endothelioma of the gall bladder, with dilatation of the stomach a Pylorus b Endothelioma

The cells contained in the center of the larger aggregations undergo hyaline degeneration. No karyorrhexis; no vacuolization. In other areas the centrally located cells of the cluster seem to lose their cytoplasm and then resemble common small lymphocytes. The change of the cells, or decrease in the size of the cells from the margin toward the center of the cluster, is extremely gradual. Necrosis described by Adler in his paper on "Endothelioma of the Pleura" was not found in this case

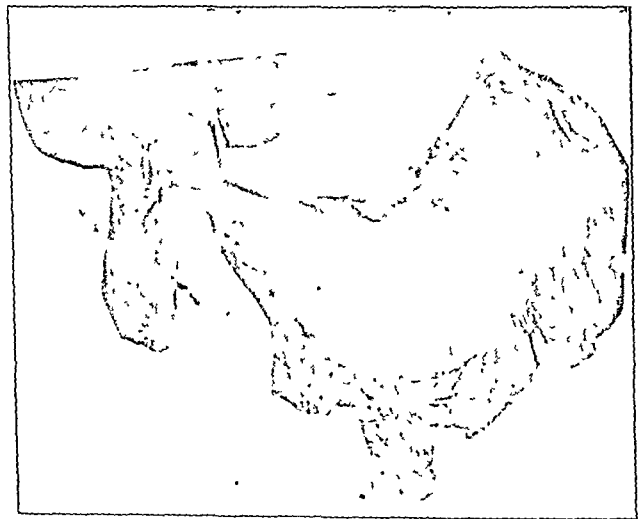


Fig 3—Cancer of the gall bladder, with enormous dilatation of the stomach Adhesion to skin

The serosa of the stomach and duodenum affords a better opportunity to study these cells as following the course of the lymph spaces. Extensive serial sections were made.

Figure 6 shows a section through the serosa and muscularis of the pylorus (low power). The thickened serosa extends from a to a. Within it can be seen strings

of the above described polymorphous cells surrounded by a rather voluminous connective tissue stroma. This connective tissue stroma contains numerous foci of round cell proliferation.

Figure 7 shows an area of the serosa under higher power; *a* represents a string of endothelial cells cut

Figure 9 shows the cluster of tumor cells in serosa of the duodenum. The nuclei of the cells seem to be swollen (vesicular), the chromatin filaments stain distinctly; at *c* is cell with giant nuclei. Numbers of these giant cells, and also polynuclear giant cells were observed. There are a great number of cells which showed degen-

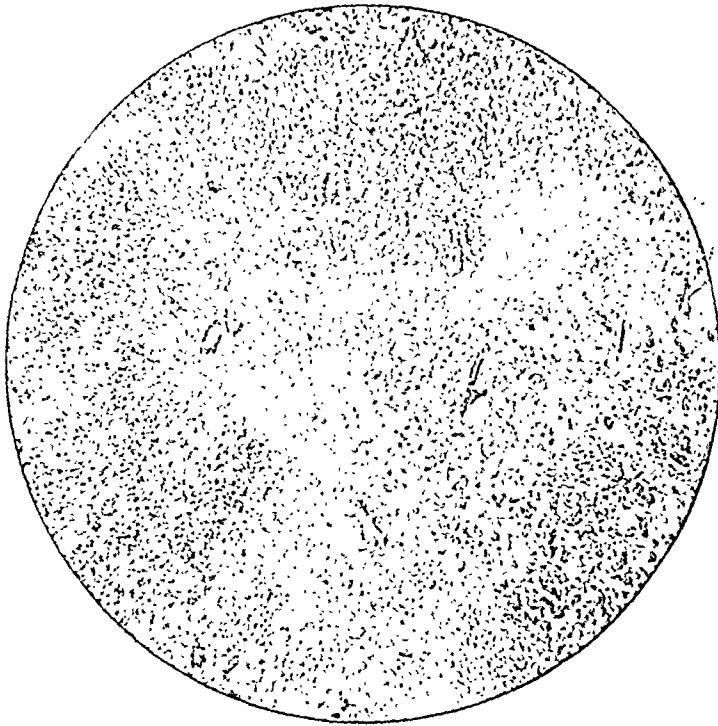


Fig. 4.—Hem. Eosin. Leitz, obj. 3. Section from margin of primary tumor. *a*. Connective tissue (inflammatory). *b*. Liver cells.

longitudinally; *b*, a similar string cut transversely; *c*, an irregularly branching cluster of endothelioma cells. The stroma is seen to contain numerous young connective tissue cells.

Figure 8 is a section prepared from the above-mentioned tissue bridge between the gall bladder and the

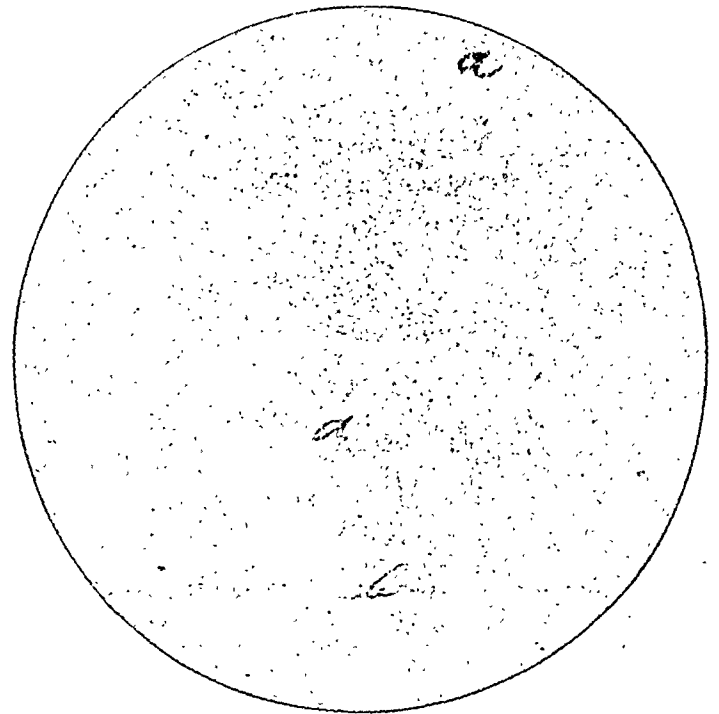


Fig. 6.—Hem. Eosin. Leitz, obj. 3. Section through serosa and muscularis of duodenum. *a-a*. Serosa. *b*. Muscularis.

erative coalescence of several nuclei, thus forming a long, sometimes semi-circular, sausage-shaped nucleus. At *a* and *b* atypical mitoses, of which all varieties were present. Abortive mitoses, clumping of the chromosomes were especially frequent.

Figure 10 is taken from the same slide as Figure 9.

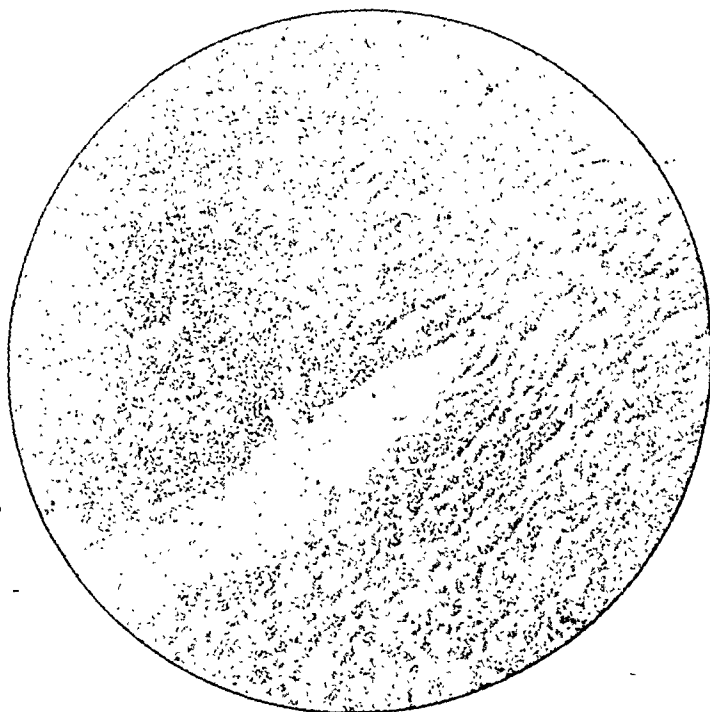


Fig. 5.—Hem. Eosin. Leitz, obj. 6. Section of tumor about 1 1/2 cm. inwardly from margin of primary tumor. Shows fibrillation of older tumor cells.

pylorus and duodenum. It shows exactly the same structure as does the center of the primary tumor; *a* represents the center of a large endothelial cell cluster. Distinct fibrillation of the endothelial cells at the margin of the cluster.

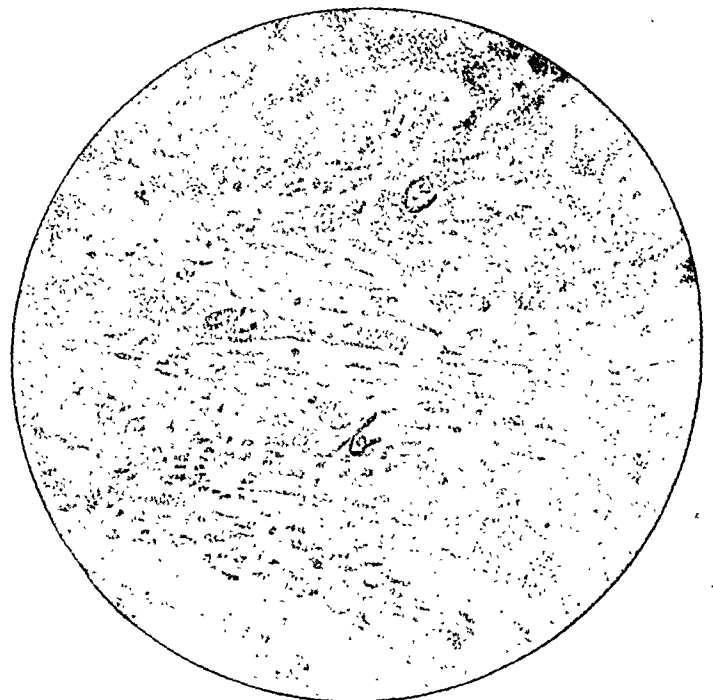


Fig. 7.—Hem. Eosin. Leitz, obj. 7. Area from Fig. 6 under higher power. *a-b-c*. Strings of endothelial cells.

In the center a cell is visible with a giant nucleus; in the cytoplasm a dead polymorphonuclear leucocyte. The nucleus of this leucocyte is undergoing karyolysis, the cytoplasm of the leucocyte is represented by a light ring around the fading semi-circular nucleus. Many in-

clusions similar to this one, with all gradations of degeneration, were observed. (Russell-Plimmer-Leyden-Schueller's Bodies.*)

In the lymph spaces, dilated excessively, the polymorphous "tumor cells" seemed to be suspended in the serous fluid (Fig. 8, a). An attempt was made to determine the chemical nature of this fluid in the fresh condition, but, owing to the small quantity obtainable, the attempt was unsuccessful. This much, however, was ascertained: The fluid did not contain any mucin; it may have contained pseudomucin, such as is found in numerous connective tissue tumors, but it was not viscid enough to consist entirely of this substance, or contain a great deal thereof. It did not ferment when brought in contact with yeast cells. It gave the reaction of albumin. The presence of small, round cells, scattered promiscuously through the polymorphous elements, suggested the interpretation of the fluid as lymph. (?)

DETERMINATION OF THE CHARACTER OF THE GROWTH.

These microscopic findings being incompatible with the diagnosis of carcinoma, and agreeing in every detail

Morphologic peculiarities are no criterion for the classification of tumors. This is shown by the confusion brought into the subject of endothelioma by the morphologic classification suggested by Hanseman.

If we, however, reserve the name of endothelioma exclusively to those neoplasms which are the result of an

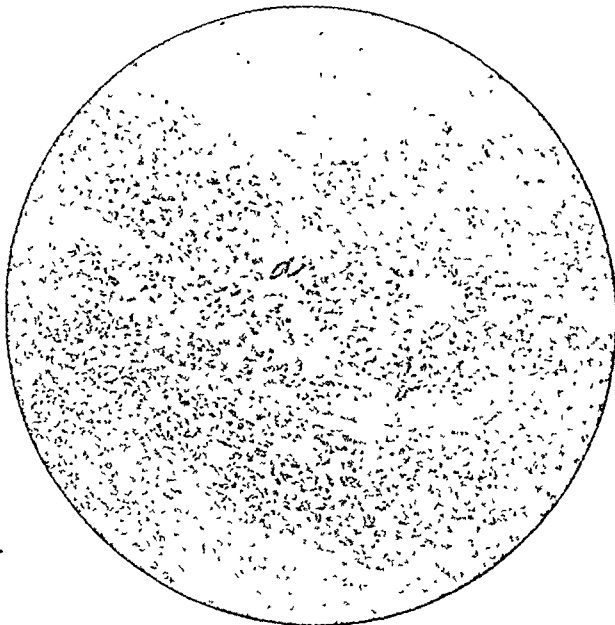


Fig. 8.—Hem Eosin Leitz, obj. 3.—Section of tissue bridge between liver and duodenum and stomach. a. Center of dilated lymph space filled with endothelial cells. b. Fibrillation of peripheral cells.

with the histopathology of endothelioma, the latter diagnosis was held as the correct one. Endotheliomata have been described by a great number of authors, and under a multitude of names, endothelial cancer, perithelioma, alveolar sarcoma, sarco-carcinoma, etc. I am not inclined to enter into the nomenclature of the subject, since that would lead to an almost endless discussion. A group of investigators believing the nature of endothelioma to be entirely or partly inflammatory, have proposed names like lymphangitis proliferans, and to convey also the neoplastic idea, lymphangitis carcinomatoides. One thing is certain, that a large number of sarcomata of organoid structure have been described as endotheliomata, which were common angiosarcomata, peritheliomata or hemangioendotheliomata. I do not see the necessity of classifying these tumors as endotheliomata, since we know that the majority of sarcomata originate from the perithelium or endothelium of the blood vessels anyway.

* With apologies to those discoverers whose names have not been mentioned.

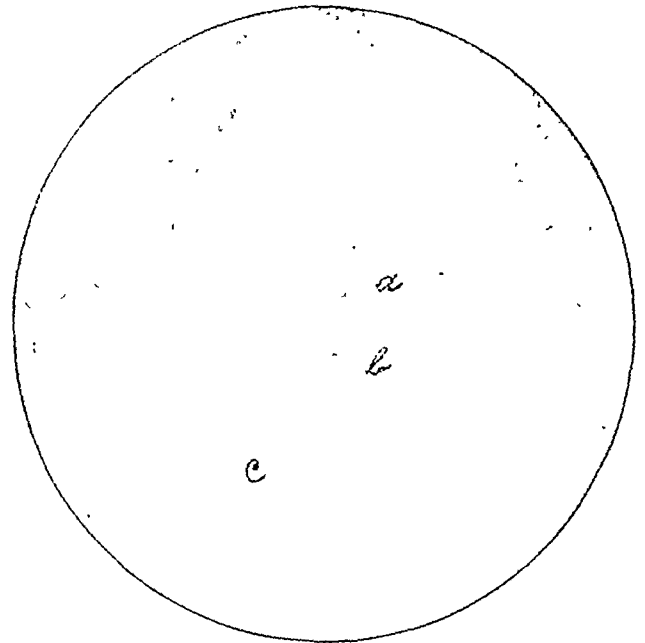


Fig. 9.—From center of alveolus in serosa of duodenum. a. Asymmetrical mitosis. b. Atypical, tripolar mitosis. c. Endothelial cells with giant nucleus. Safranin. Leitz, 1/12.

abnormal proliferation of the endothelium lining the lymph spaces and serous cavities, we have well-characterized, clear-cut tumors.

That the name of lymphangitis proliferans is also justifiable will be shown below, for I think the inflammatory character of the tumor which I have described

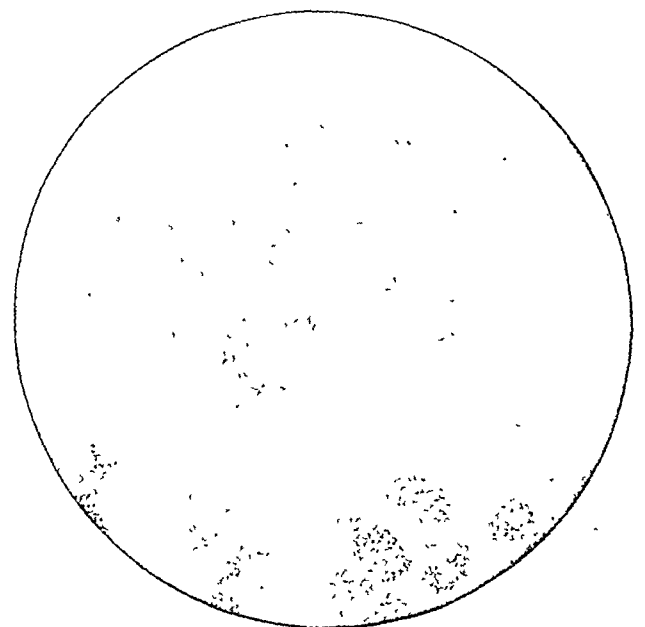


Fig. 10.—Polymorphous endothelial cells. In center of field cell with giant nucleus containing a leucocyte. Safranin. Leitz, 1/12.

can not be questioned, at least the *primum movens* of the proliferation of the endothelial cells is of a nature the same as that found in chronic inflammations.

In a number of endotheliomata which I had the opportunity to study, I have never seen any endothelial

proliferation in the lymph spaces unless the surrounding tissue was also in a state of inflammatory hypertrophy. This observation is adduced by Neelsen as an argument in favor of the inflammatory character of the new growth. In addition to this one can easily see that the filling up with cells of the lymph spaces is not the result of an invasion of cells, as we see it in carcinoma and sarcoma, where the elements first get into places not their legitimate habitat, proliferate, and then destroy the surrounding tissue. In the true endothelioma there is first a swelling of the resident cells due to irritation (Reiz Anschwellung, Pollman), most likely of chemical nature, perhaps a cellular poison as described by Ehrlich. Thereafter the proliferation again of these same resident cells takes place in answer to the same formative irritation; dilatation of the lymph space follows. It is evident that the differentiation of the endothelial cells will be lost, or will at least suffer through this onslaught, and anaplasia will result. But this anaplasia may run through "physiologic" gradations. The highly differentiated mesodermic endothelial cells will change into connective tissue cells of a lower type, and will share the fate of all common connective tissue cells. They will fibrillate. This is shown strikingly in Figure 5. The older cells undergo fibrillation first, namely, those seen along the margin of the dilated spaces. Being remote from the lymph current they are deprived of an opportunity to perform their function, even if they were able to perform it; as a result, the cells resign themselves to the quiescent state of fibrillation. This is incompatible with anaplastic, blastomatous carcinoma or sarcoma cells, but is known as the routine process in inflammatory scar tissue formation, i. e., the cells do not maintain the blastomatous character of malignant cells.

The regional expansion of the process may be explained thus: The primary formative irritant was furnished by the presence of the gallstones in the gall bladder, perhaps with an addition of micro-organisms (which were not found). Or there may have been at first an inflammatory occlusion of the cystic duct. The lymphatics of the gall bladder had to remove the altered contents of the same. The change in the chemism of the substance carried by the lymph spaces caused the inflammatory changes of the lining epithelium, as described above.

The cells thus vitiated secreted in turn a vitiated substance which acted as the formative irritant to the adjoining still normal endothelial cells. In this method a circulus vitiosus is established. Experimental pathology and physiology may be able to prove these ideas some day.

Other retrogressive metamorphoses described in connection with endotheliomata, as myxomatous, and especially hyaline degeneration, are likewise frequently found in other common chronic inflammation, viz., in certain forms of peritonitides, zuckerguss exudates, etc., and in a great number of so-called benign tumors.

Furthermore, there is not an area in the tumor where there is not common inflammatory tissue surrounding the tumor cells proper, no matter how few they may be in number. Even in the extreme ends of the tumor where the endothelial cells are simply swollen and not multiplied, there is lively inflammation in the surrounding connective tissue. This, also, is unlike the peripheral growth of both carcinoma and sarcoma. We see a round cell sarcoma invade the normal muscular structures, a carcinoma metastasis in a normal lymph node, etc. Specimens stained with Sudan 3 (Formalin-freezing sections) showed numerous endothelial cells containing

fat droplets. These are most likely the "vacuoles" found and described in hardened specimens of endothelioma by Adler and others. The significance of these fat drops is not easily explained. Thoma has found that the covering endothelium of the serous surfaces absorbs albumin contained therein into fat. It may be that such a process went on in this endothelioma. The cells certainly do not show any fatty degeneration, but that there is an energetic metabolism going on in the cells is shown by the presence of the serous exudate filling and dilating the affected lymph space (Fig. 8, a). I can not believe that this liquid is a simple transudate since there was only an inconsiderable quantity of fluid in the free peritoneal cavity.

METASTASES.

In the tumor here described there was no metastasis; in two more which came under my observation, one of the peritoneum (Dr. E. F. Fish's case), and another of the skin, they were likewise absent. The cases reported in the literature of the last twenty years show about 50 per cent. with metastasis, but I have noticed in the illustrations that a number of these appear like common angio-sarcomata, i. e., the tumor cells are not found restricted to the lymph spaces. Neelsen, who described a number of endotheliomata, lays especial stress on the fact that the cells proliferate *in loco* and do not immigrate. But he has metastases. Wagner could not find any secondary tumors in a woman of 69, where all the tumor cells were within the lymph spaces. In a great many cases the metastatic tumors were found in the vicinity of the primary one; in these instances it is doubtful whether there was not a contiguous growth, as not one report mentions reconstruction methods as a means of ascertaining true metastases. Age and sex do not seem to affect the frequency of occurrence of endothelioma.

Hereditary influence has not been proven in man. Eberth-Spude have seen endothelioma in several members of a family of white mice. Transplantation has been unsuccessful.

OTHER CONCLUSIONS.

Endothelioma, hemangio-endothelioma and perithelioma may be blastogenetically alike, but the first tumor differs materially from the last two in the mode of growth, histology and clinical aspect. One need but think of the functional difference of the normal elements to appreciate this fact.

Endotheliomata are only relatively malignant. A great number of tumors reported under this name are essentially inflammatory.

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THE OPERATIVE TREATMENT OF CYSTOCELE AND PROCIDENTIA UTERI.

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CHICAGO.

The evolution of the operative treatment of cystocele and rectocele with resultant procidentia includes the following essential factors:

1. Operations of superficial denudation and reefing of the anterior vaginal wall as practiced by Sims and Emmet.
2. Operations on the lateral vaginal walls with superficial denudation, as described by myself and others.
3. The recognition of the essential fact that no operation can succeed that does not include plastic work on the lateral and anterior vaginal fornices with the definite purpose of forcing the cervix uteri back to its normal location in the hollow of the sacrum.

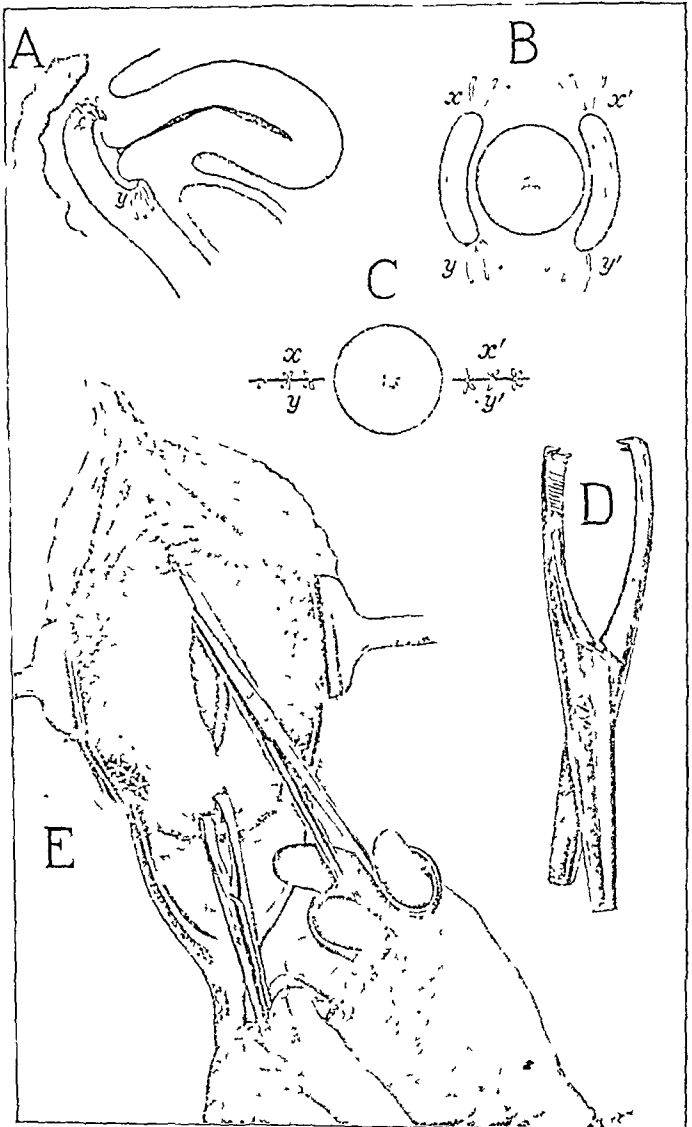
All these measures have been employed with varying success, the variation being dependent on the ability of the operator to force the cervix uteri back into the hollow of the sacrum and to make it stay there. This location for the cervix is the prime indication. With the cervix uteri in its normal posterior location, the corpus uteri must necessarily fall forward into its natural position of anteversion.

The methods above outlined, even though supplemented by hysterorrhaphy, have so frequently failed to give permanent results that many surgeons advocate the more radical alternative of hysterectomy. Of late, however, the essential principles and indications on which successful plastic work may be done are becoming more clearly defined. Dr. Edward Reynolds' of Boston sets forth two anatomic points which in the previous literature have not been very clearly brought out, but which necessarily underlie the success of this class of operations. They are: 1. That cystocele is hernia of the bladder and should not be treated by superficially denuding and reefing in the overstretched portion of the vaginal wall, but that this overstretched portion should be removed and the lateral margins of it should be united by interrupted sutures. In other words, this hernia should be treated like other similar conditions by reduction and the excision of the sac so as to expose and unite the strong, fixed facial margins of the wound. 2. A successful operation must recognize two fixed points of attachment of the anterior vaginal wall; the first at its lower extremity to the inner surface of the pubes; the second at its upper extremity to the facial structures

on either side of the uterus, which are in direct connection with the broad ligaments. Accordingly, I have made radical changes in my method of elytrorrhaphy for the correction of cystocele and procidentia uteri. The modified operation which I have performed several times with most gratifying results may be divided into two steps, and is briefly as follows:

1. A crescentic denudation and suturing in the vaginal wall on each side of the cervix uteri.
2. The removal of a portion of the anterior vaginal wall and suturing together of the wound thus made.

FIRST STEP.—The first part of the operation is performed preferably with the patient in Sims' latero-prone



position and the vagina exposed by means of Sims' speculum. The blade of the speculum should be perforated at the extreme end. Before the speculum is introduced the cervix should be attached to the end of the blade by means of a temporary suture which is passed through the posterior lip of the cervix and the perforation in the speculum and tied. This suture should remain in place throughout the first step of operation. The object of this temporary stitch is to hold the cervix uteri far back in the hollow of the sacrum while the sutures are being secured which shall fix it there. When the cervix is thus held back the space anterior to the cervix is so increased

1. An epoch making paper on this subject has recently appeared from the pen of Dr. Edward Reynolds, American Medicine, Aug. 2, 1902.

that the corpus readily falls forward into a position of decided anteversion; that is, into the normal position. It is essential that this part of the operation be performed with the organ in normal position, because if so performed the result is more likely to be permanent. Two semi-circular strips are denuded in the vaginal wall close to the uterus about one-half of an inch wide on either side of the cervix, their convexity being turned toward the cervix. This denudation is shown in Figure B, xy and $x'y'$. This denuded surface is shown on one side of the cervix in Figure A, xy . Each denuded surface is now closed on itself by means of fine chromic

Figures 1 and 2. Figure E shows the lines of union lateral to the cervix uteri made in the first step of the operation and shows the incision being made by sharp-pointed scissors through the vaginal wall, but not including the vesical wall, from a point near the cervix uteri in the median line of the vagina to a point near the meatus urinarius. The dotted lines in Figure E indicate the extent of this median incision. While the incision is being made the cervix is held securely in place by means of flat vulsellum forceps, a full-size section of which is shown in Figure D. Figure F shows the

Figure 1.

Figure 2.

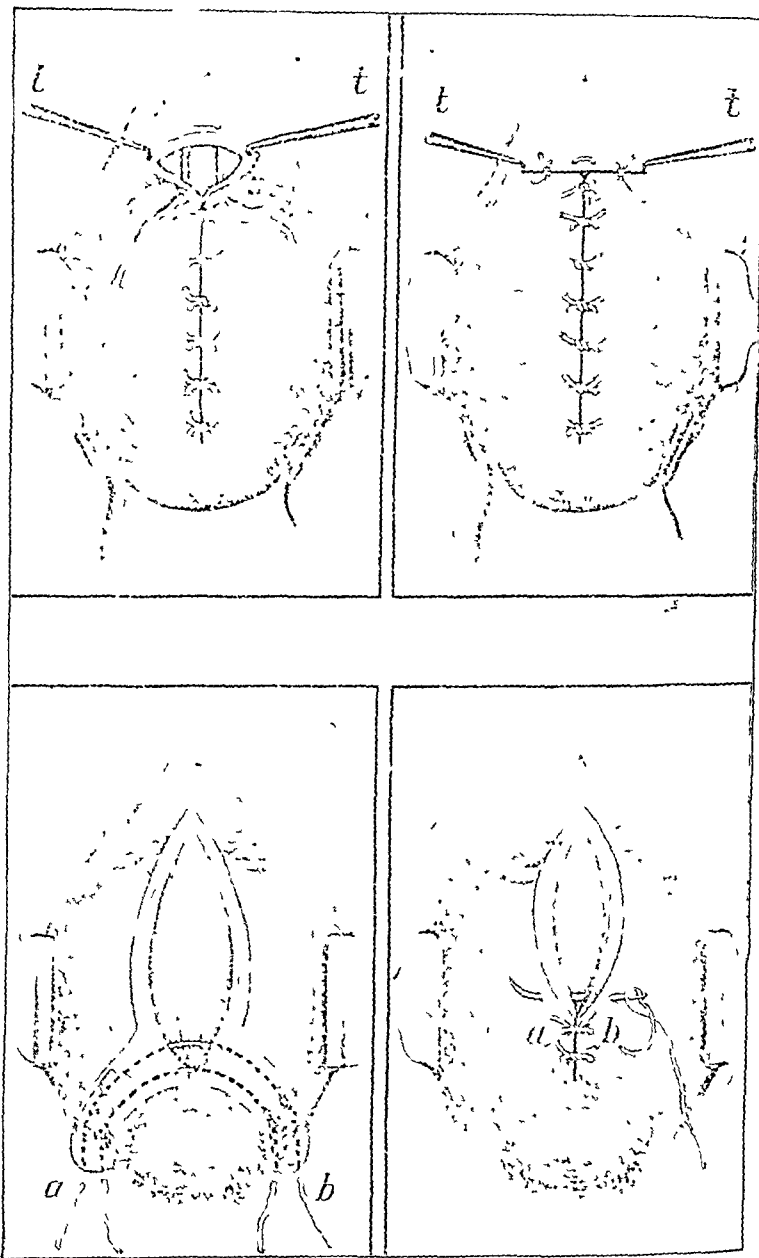
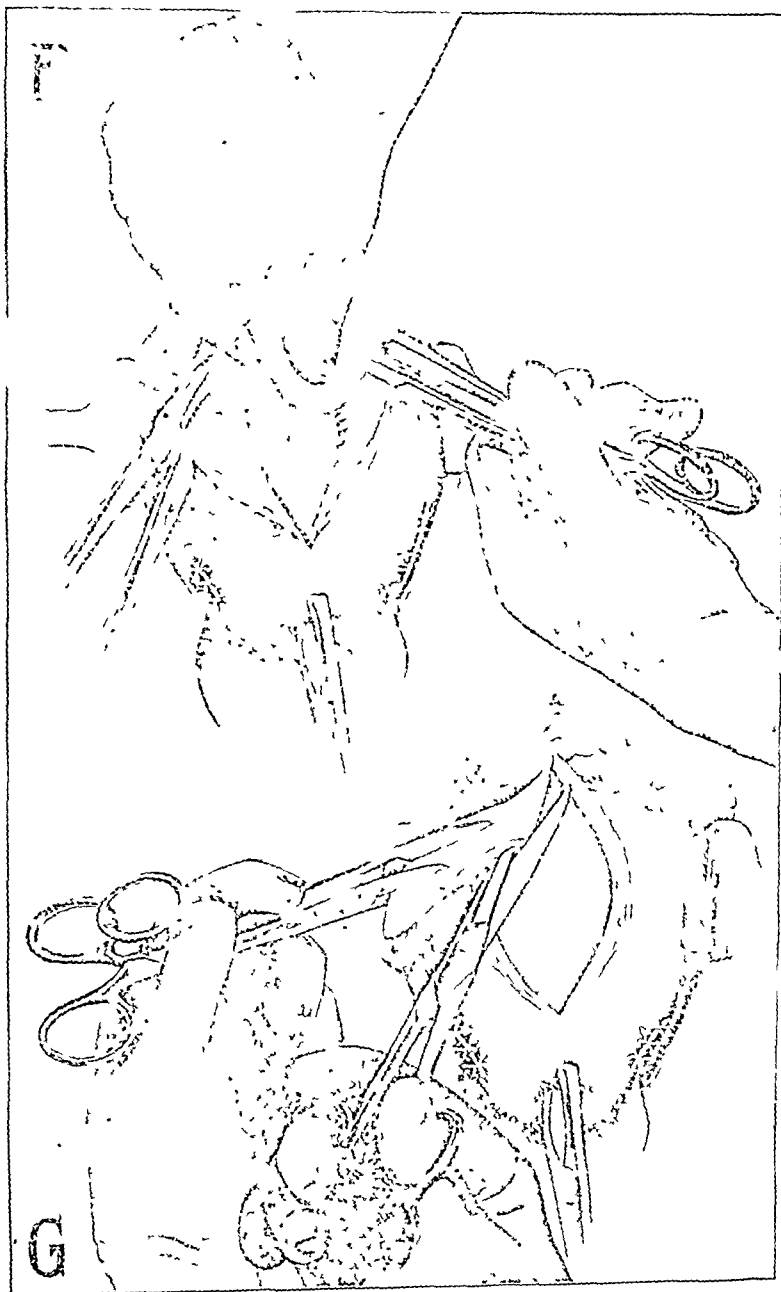


Figure 3.

Figure 4.

catgut sutures, Figures A, B and C. A and B show the sutures in place, but not tied; C shows them tied and also the lines of union running laterally from either side of the cervix. The folding of these denuded surfaces on themselves causes their lower extremities y and y' to be brought in contact with their upper extremities x and x' , Figures A, B and C. By this means the cervix is lifted upward and backward toward the hollow of the sacrum and held there.

SECOND STEP.—The second step in the operation is performed with the patient in the dorsal position, the parts being exposed by means of a Sims speculum or a Simon retractor. The operation is now continued as shown in Figure E, then in Figures F and G, then in

vaginal wall being stripped off from the vesical wall. The operator has seized the margins of the flap in pressure forceps and is stripping it away from the vesical wall by sponge pressure. This will be found a very effective method of blunt dissection. The flap on the opposite side is held in pressure forceps and is represented as already stripped off. In Figure G the loose flap has been removed by means of scissors from one side and is being removed from the other side. Figure 1 shows the median vaginal wound nearly closed by means of chromic catgut sutures. Experience in this operation has shown that in the majority of cases there is considerable redundant vaginal wall in the region of the

urethra which may be disposed of most effectively by uniting the wound in a transverse direction. Accordingly the lateral margins of the wound are shown as being drawn apart by tenacula, *t. t.* A single stitch introduced but not tied shows how this portion of the wound should be united. Figure 2 shows all sutures introduced and the operation complete. The tenacula are the same as shown in the previous figure.

It is extremely essential in this operation that the entire thickness of the vaginal plate of the vesico-vaginal septum be removed, as shown in Figure G. The former method of merely denuding a superficial surface is ineffective. It is unnecessary to add that this operation should always be supplemented by a perineorrhaphy.

Figures 3 and 4 are here introduced to show a method of denuding and introducing sutures so as to force the cervix uteri back into the hollow of the sacrum. This method is offered as a substitute for the one shown in Figures A, B and C, and will be found most applicable to cases of extreme relaxation of the pelvic floor. In principle it is the same as that employed many years ago by Sims, Emmet and others. Figure 3 shows a circular denudation in front of the uterus extending on either side to the post-vaginal fornix. Two sutures are shown in place but not tied. Three sutures are generally used instead of two. These sutures, when tied, will draw the loose vaginal tissues on either side of the cervix to the front of it so as to bring points *a* and *b* together in front of the cervix, as shown by Figure 4, *a, b*. The structures thus brought in front of the cervix uteri are in close relation with the broad ligaments; hence the effect is to bring the lower margins of these ligaments to the front of the cervix and so to force the cervix upward and backward. Reynolds prefers to expose the lower margins of the ligament and to introduce the sutures directly through them. In Figure 4 a threaded needle is being introduced to complete the closure of the median vaginal wound. This part of the operation is the same as in Figs. 1 and 2.

The accompanying figures show the cervix drawn well down to the vulva. This is not in accordance with the fact. The cervix, as already explained, is held well back in the hollow of the sacrum during the operation. The appearance of drawing the cervix downward to the vulva is only introduced to facilitate illustration.

PROGRESSIVE BULBAR PARALYSIS.*

ALFRED C. COTTON, A.M., M.D.

CHICAGO.

Kitty M., aged 11 years, an American schoolgirl, first came to my clinic Jan. 17, 1902.

Family History.—Mother living and well; father died of pneumonia; she has four brothers and sisters in good health; both maternal grandparents lived to old age; her paternal grandmother developed some form of paralysis after childbirth. Her paternal grandfather was paralyzed late in life, and had some disturbance of speech which passed away before death.

Previous History.—Birth and early history negative except for the usual diseases of infancy. She had pneumonia when six years of age; diphtheria three years ago and again last April (1901) from which she apparently made a good recovery. For the past two or three years the mother has noticed more or less impairment of hearing.

Present Illness.—Early in September the mother detected slight difficulty in swallowing and some defect in the child's speech; it seemed as if there were something in the mouth.

About the middle of September she was sent home from school with instructions to have her eyes tested. This was done and she was given glasses for astigmatism.

Drizzling and speech defects led to a consultation with a throat specialist, who advised the removal of postnasal adenoids. The operation was performed about the 1st of October. She had occasional fits of obstinacy and cried frequently, i. e., she was emotional, but showed no evidence of impaired mentality. Speech and deglutition became increasingly difficult, so that the hand was occasionally employed to retain food in the mouth.

Examination.—A girl of average size for her age, but somewhat pale and poorly nourished. The expressionless face, fallen lip and drooling mouth first arrest attention. She answers questions indistinctly and laboriously; the speech defect shows inability to pronounce labials and denti-linguals; she can not wrinkle the forehead, elevate the eyebrows, close the eyes completely, purse the lips or smile; the tongue can not be protruded beyond the teeth or raised to the roof of the mouth; it is thickly coated, plainly shriveled and lies passively in the floor of the mouth with occasional flickering tremors. The pharynx presents no gross lesions, but the uvula and palate show some anesthesia; the voice is monotonous and of nasal quality; the mouth is full of saliva which pours over the pendulous lip; the child masticates food slowly and swallows with marked difficulty, at times choking and coughing. Fluids do not regurgitate through the nose, nor is there any history of this symptom. The respiration is shallow and under excitement or exertion becomes slightly snoring; she also snores while asleep.

The examination of the ocular fundus and ear by Professor Hotz gave negative results. Pupillary reflex normal. The range of ocular movements is somewhat restricted toward the right. Slight horizontal nystagmus is at times noticeable. She can not close the eyes completely, prolonged effort causing parallel deflection upward and to the left. Eyes are constantly suffused, and there is conjunctival anesthesia. The general muscular system shows but little wasting. Patellar reflexes normal and co-ordination good. Electrical response to both galvanism and faradism normal, with the exception of the facial muscles, which show reaction of degeneration. A. O. C.=2.5 M. A., C. C. C.=4.5 M. A., A. C. C.=4.5 to 5 M. A. There is no response to faradism (the strongest current) in the facial muscles. (Tested by G. W. Hall, M.D.) No anesthetic areas, either thermal or tactile, were found except on palate and conjunctiva. No tremors were present, except occasional fibrillary twitchings of tongue and facial muscles. Taste as far as observed is not affected. Chest examination negative with exception of systolic murmur; abdomen negative; urine negative.

Subsequent History.—The child was under observation during the last weeks of her life, during which time inanition was steadily progressive, with loss of weight. Towards the last she showed increasing somnolency, disinclination to exertion, and staggering, uncertain gait. Impairment of speech, deglutition and tongue movements increased. In the last two weeks fluids were regurgitated through the nose. A few days before death she developed a slight bronchitis with some elevation of temperature (103).

Throughout the observation until the last weeks the highest temperature was 100.4, the lowest 97, with a tendency to be subnormal. The pulse ranged from 70 to 120 and was easily disturbed; respiration, 20 to 26.

She died rather suddenly the night of April 7, 1902.

Bulbar paralysis is certainly so rare a disease among children that no apology is needed for bringing it to your attention. As you will recall, this disease was described for the first time in 1860 by Duchenne, and it was not until ten years later that the real seat of the lesion was recognized by Charcot and Leyden.

The fact that the symptom-complex of glosso-labio-laryngeal paralysis may accompany lesions other than the degenerative process in the nuclei of medulla, would excuse a brief consideration of the classification given by Collins in "Twentieth Century Practice."

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee: Drs. Edwin Rosenthal, H. M. McClanahan and Samuel W. Kelley.

This author presents these paralyzes with reference to their etiology under eight heads. With your permission I will give them seriatim in comparison with the clinical findings of the case before us.

COLLINS' CLASSIFICATION.

1. Progressive labio-glosso-laryngeal paralysis.
2. Primary vascular lesions; (a) acute inflammatory; (b) bulbar hemorrhage; (c) thrombosis and embolism.
3. Bulbar neuritis (associated neuritis of bulbar nerves).
4. Infantile bulbar paralysis; (a) familial; (b) hereditary.
5. Secondary degenerative lesions of the bulb; (a) in amyotrophic lateral sclerosis; (b) in syringomyelia; (c) in tabes and multiple sclerosis.
6. Pseudobulbar paralysis (cerebral).
7. Tumors of medulla oblongata, including gummata.
8. Bulbar paralysis without anatomic foundation (asthenic bulbar paralysis).

From his second class, due to vascular disturbances, this case may be excluded by its gradual onset and absence of acute symptoms, as fever, disturbance of pulse rate, vomiting, etc.

For the same reason (gradual onset) we may rule out class three, viz., associated neuritis of bulbar nerves, which condition not only causes a rapid development of symptoms, but is rarely reported as furnishing all the Lipton-complex of true bulbar paralysis.

The fourth class (familial or hereditary type) we may possibly exclude, for want of corroborative history, her brothers and sisters being free from any suggestion of similar trouble.

There is no evidence of any involvement of the cord, such as spasticity, increased muscular irritability or atrophy.

Lack of sensory disturbances, as analgesia, thermic anesthesia and also lack of muscular atrophies may exclude syringomyelia.

The persistence of the patellar reflex, absence of crises and the Argyll-Robertson pupil may allow us to dismiss tabes from consideration, and, although we have a slight nystagmus, the intention tremor, scanning speech, rigidity and exaggerated knee-jerks of multiple sclerosis are wanting. If, as it has been claimed, an isolated area of a developing multiple sclerosis have its seat in the medulla and produces the symptoms seen in this patient, may we not claim that it is time (seven months) for the symptoms of other scleroses areas to manifest themselves?

In pseudobulbar (cerebral) paralysis we should expect a sudden onset with possible subsequent improvement until there is a second attack, possibly hemiplegia; the atrophy should be that of inanition and the muscles should not show the reaction of degeneration. Especially is atrophy of the tongue wanting. Nor is pseudobulbar paralysis long free from other evidences of cerebral involvement, as mental impairment and emotional disturbances.

From tumor of the medulla it is possible that enough time has not yet elapsed for the development of sufficient symptoms to make positive differentiation. Indeed, we have already involvement of the upper facial muscles and slight involvement of the ocular muscles. However, the negative condition of the fundus, absence of sensory disturbances, cephalalgia, etc., might lead us to exclude a tumor of any considerable size. The entire absence of any other signs of syphilis renders the diagnosis of gummata improbable.

Asthenic bulbar paralysis, without anatomic foundation, is not recorded as showing true muscular atrophy with the reaction of degeneration. Nor is its course

steadily progressive; on the contrary, almost complete cessation of symptoms follows intervals of rest.

The extensive involvement of the facial nerve seen in this case, though not of itself a part of the symptom-complex of true bulbar paralysis, still occurs with sufficient frequency not to jeopardize our diagnosis, providing the pathognomonic symptoms be present. As to the ear involvement, the history of partial deafness for the past three years would indicate merely a coincidental condition.

It seems to the writer that from the symptoms present, the course of the disease and the onset, he is justified in classing this case as degenerative bulbar paralysis. The extreme rareness of this affection in a female child lends exceptional interest to this case.

AUTOPSY REPORT BY DR. P. BASOE.

April 8, 1902.—The autopsy was held about eighteen hours after death and was limited to the removal of the brain and spinal cord.

General.—The body was poorly nourished. Rigor mortis slight. Lividity posteriorly. No external marks except an opening to the left of the umbilicus through which embalming fluid had been injected. No injection had been made into the vessels. The scalp and skull presented no changes. There were no abnormalities of the meninges. The brain and cord showed no changes externally and were immediately placed in a 10 per cent. solution of formalin in water and carefully suspended. An opening was made into the abdominal cavity from behind. The spleen was removed and found of normal size. The kidneys also of normal size, capsules not adherent, section dark red, cortical markings distinct.

Brain.—The brain and cord were sectioned later and showed no gross changes. After preliminary formalin hardening the medulla was placed in Müller's fluid. Serial sections will be made later. Pieces of cortex and cord were taken at the autopsy, placed in 96 per cent. alcohol, cut without embedding and stained by Nissl's method. In most of the ganglion cells of the frontal lobe a normal condition of the nucleus, nucleolus and Nissl bodies is seen. In a few cells the Nissl bodies between the nucleus and base of the cell have been broken up into fine particles, less deeply stained than the normal Nissl bodies. A number of vessels cut longitudinally are filled with red corpuscles. There are no perivascular infiltrations.

Motor Area.—The cells show distinctly outlined generally centrally situated nuclei with nucleoli. In several cells there is a rim of unstained protoplasm around the nucleus, the stainable substance being arranged along the periphery of the cell as densely aggregated small granules. The vessels are normal.

Cervical Cord.—In specimens stained by the Marchi method degenerated fibers were scattered in every portion. They seemed more numerous in the direct pyramidal and cerebellar tracts than elsewhere. However, they were not numerous enough to leave marked gaps in Weigert-Pal preparations. The gray matter was normal. Marchi preparations from the lower portion of the medulla showed scattered degenerated fibers in the lateral columns. The posterior columns and pyramids were practically uninvolved, and show a normal number of fibers in Weigert-Pal preparations.

As stated before, the remainder of the medulla has not been examined yet.

DISCUSSION.

DR. J. M. DODSON, Chicago—I take it that the question in this case is one of central or peripheral lesion. The history of an antecedent diphtheria, of course, suggests itself in this connection, although the long interval that had elapsed from the last attack of the disease and the onset of symptoms seems almost to negative that possibility. Yet I think it does not do so entirely. I shall look with interest for the publication of the report of the complete postmortem findings.

DR. COTTON—Seeing this case for the first time in clinic, I made a snap diagnosis of bulbar paralysis as one of the possibilities, because of the symptoms presented. Meeting the mother afterward, I was surprised at her intelligence regarding the symptoms of paralysis, and I then found she had

been to other clinics. She had been encouraged to believe in the recovery of the child from the fact that a diagnosis of post-diphtheritic paralysis had been made in a neurologic clinic. The length of time intervening, however, between the attack of diphtheria and the occurrence of the paralysis was greater than I had ever seen in such a case. The fact that the disease had progressed three months before coming under my observation led me to exclude postdiphtheritic paralysis as we understand it by that name. The suggestion of intoxication from infection as affecting the function of nerves is, of course, a wide field for speculation, and the cases of pseudo-paralysis without anatomic foundation remain yet unexplained. The autopsy thus far in my case seems to confirm the diagnosis; however, it would be just as interesting to us all if the autopsy were negative. That all the symptoms of bulbar paralysis should be present without any anatomic changes in the bulb or other nerve structures would certainly be remarkable. Such cases are recorded, however, as asthenic bulbar paralysis, according to Oppenheim and others, without anatomic lesion yet discoverable.

Special Article.

THE TYPHOID EPIDEMIC AT ITHACA.

(By our Special Commissioner.)

III.

THE IMMEDIATE CAUSE OF THE EPIDEMIC.

In casting about for some special cause for the epidemic, public attention naturally became focused on the fact that a band of Italian workmen had been employed in the work of preparing a dam site and reservoir projected by the Ithaca Water Company, the private corporation controlling the Six Mile Creek and Butter-milk Creek supplies. Considerable friction had been generated between the water company and the townspeople over the construction of the proposed dam, and public opinion seized, with a not unnatural avidity, on the presence of the Italian laborers as affording a satisfactory explanation for the outbreak. About 100 of these workmen were employed in the gorge of the stream at a point nearly one mile above the intake, up to about the middle of November, 1902, and during the months of November and December men and teams belonging to the town were also engaged in work on the dam and its surroundings. One gang of Italians was controlled by the contractors and one, working below the dam, by the water company itself. According to the statements of the officials of the water company, the Italians did not work in the gorge after November 14, and, although they remained at work in the vicinity for some time longer, all but twelve were discharged on December 12, and all were discharged on December 19. There is evidence that both the contractors and the officials of the water company were alive to the responsibility entailed by the presence of these workmen at this critical point, and that measures were taken to prevent the fouling of the stream. It is said that lime was used in large quantities for the destruction of and the disinfection of the excreta. At the same time, there is abundant evidence for believing that, however careful the supervision of the Italians may have been, contamination of the stream and its banks was not altogether prevented. Many observers testify to having

witnessed in the neighborhood of the camps a state of things which was far from reassuring, and which, in the light of subsequent events, throws much suspicion on the presence of these men. No information can be obtained, however, regarding the occurrence of any case of illness among these workmen, and there is no record indicating that other than good health was maintained among the whole crew during the period of their work.

It is certainly a seductive hypothesis that the presence of these workmen is connected with the epidemic that followed a few months later, but after a careful examination of the site of the dam and the surroundings of the camps of the Italians, and after a consideration of the dates at which the workmen were employed in the gorge and the dates at which the early cases of fever developed, the writer is unable to find any convincing evidence for this view. The meteorological record shows that during the months of November and December, 1902, heavy rains and periods of thaw occurred several times, so that if infectious material in large quantities had been deposited by any of the Italians on the banks of the stream, such material would have been most likely to find its way into the water at a date considerably earlier than that which marks the beginning of the present epidemic. Furthermore, while it is conceivable that a typhoid convalescent with an infectious urine discharge, might have been present among the Italians during the period of their stay in Ithaca, it does not seem likely that either the character or the quantity of the infectious material discharged by such a convalescent would have been sufficient to produce a severe outbreak after the lapse of several weeks. The more plausible supposition that a mild or "walking" case of typhoid fever existed among the workmen, and that the washing into the stream of the accumulated bowel discharges of such a patient cause the present outbreak, seems to be rendered somewhat problematical by the utter absence of evidence that any such case existed and by the facts of the meteorological record. One is undoubtedly tempted to suppose that the presence of these workmen in the gorge is connected in one way or another with the outbreak, but, in view of all the facts, such a hypothesis must be accepted with some hesitation.

It seems, indeed, quite as reasonable to assume that a case of typhoid fever, possibly in a mild and unrecognized form, existed at some point on the Six Mile Creek watershed, and that the discharges from such a case either passed directly into the creek or were washed down from some one of the scores of privies that afford opportunity for such a mode of contamination. The sanitary history of Ithaca, as has been already pointed out, shows that infection of the water has probably occurred in the past on more than one occasion. The outbreak of fever in 1902, it should be remembered, was a spring epidemic only less severe than that of the present year.

In favor of the view that a case of typhoid fever existed somewhere on the watershed during the month of January, 1903, might be urged the fact that the extent and duration of the infection suggest the presence in the water of the stream of a very large amount of infectious material and also of a continuance of the infectivity of the water over many days. It should be kept in mind that the stream in question is small, that its current is swift, and that there is practically no storage, so that the conditions are radically different from those obtaining in the case of a polluted lake or reservoir. It is quite possible, as has been suggested, that material from an infected privy may have been spread as manure on the surface of a field bordering on the stream itself or on one of its rapidly flowing tributaries.

Certain analogies with the famous Plymouth, Pa., epidemic of 1885 at first inclined several observers to seek for some connection between the "January thaws" and the outbreak of typhoid fever in Ithaca, but such a connection, if it exists, is not obvious. As is well known, the period of incubation in typhoid is somewhat uncertain, but the best authorities agree that a period of at least eight to fourteen days generally precedes the manifestation of definite symptoms, and in many cases the incubation period is as long as twenty-one days, or even longer. It will be seen by reference to Table 2 that the maximum number of cases that occurred among the students developed during the three-day period, February 4-6, which would place the period of infection about January 21-23, if it were assumed that fourteen days had elapsed since infection. It will be noticed, however, that many cases of typhoid fever appeared among the students considerably earlier than this, and, even allowing for an incubation period as brief as eight days, some individuals must have been infected much earlier than January 21. This inference is confirmed by the undoubted fact that many cases of typhoid fever appeared in Ithaca during the week January 19-26. On January 26 one of the local papers (*Ithaca Daily News*) contained the statement that 73 cases of fever existed in the town, and this statement was one of the first published indications of the existence of an epidemic. During the following week many more cases were reported, and on February 2 237 cases were said to exist in Ithaca.

All these facts (see especially Table 2*) indicate that the active agency in the infection was operative during at least several weeks, possibly extending from the first of January to the middle of February. There is no conclusive evidence of a sudden outburst of infection confined to a few days and terminating more or less abruptly. On the contrary, the facts rather point to a specific contamination that persisted for several weeks. The meteorological table shows that there was an extended thaw lasting from the first of January to the fourth; a slighter one about the middle of the month

(Jan. 16-17), and the most marked of all January 27-30. It is certainly possible that the thaw early in January may have had some connection with the first cases to be reported, but if that were true one would expect that the onset of the epidemic would have been marked by a more explosive character than was actually the case. As a matter of fact, the beginnings of the outbreak were apparently quite gradual. It may be noted, for example, that the first patient was admitted to the University Infirmary on January 23, a date some days after cases of typhoid fever had made their appearance in the town, and it was not until about February 1 that the number of cases among the students began to assume highly alarming proportions. The most extended thaw of all, January 27-30, does not seem to have had any noticeable effect on the number of cases, unless one assumes that the cases developing between February 4-6 could be traced to infection at the time of this thaw. This, however, seems hardly likely, since a period of incubation so much shorter than the average would hardly have occurred in the maximum number of cases, and it would naturally be anticipated that the effect of this thaw would manifest itself especially about February 11-14, a time when the epidemic was plainly relaxing its hold (Table 2). The rather insidious beginnings of the outbreak, followed by a slow rise to a period of maximum infection and its final tardy and reluctant dying out, are not facts that betray the existence of any definite relation between any particular January thaw and the infection, although it seems only fair to suppose that such thaws may have served, from time to time, to accentuate the pollution.

MANAGEMENT OF THE EPIDEMIC.

Both town and university authorities have been subjected to unsparing criticism in various quarters for the overcrowding of the city hospital and the University Infirmary, and for the general management of the epidemic conditions. With respect to the overcrowding, such criticism has, perhaps, not been wholly just. There is no doubt that both hospital and infirmary have been greatly overtaxed almost from the beginning of the epidemic, but it is difficult to see how this could have been altogether avoided. The proportion of cases to the population has been very high, and both Ithaca and the university are to be congratulated that the facilities for caring for the patients were as ample as was the case. Few small towns and few universities are adequately provided with hospital accommodations for such an extraordinary emergency. The authorities of New York or Chicago would assuredly find themselves beset with many difficulties if they were suddenly called on to face the necessity of caring for 100,000 typhoid patients, and yet the proportion of cases to population in Ithaca was probably at least as large as this. The University Infirmary and its management, in particular, have received a great deal of sharp criticism, and it seems to be nowhere questioned that during the height of the epi-

* See p. 783, issue of March 21.

demic the conditions in that institution were more like those of war times than of ideal hospital practice. Unavoidable overcrowding was, of course, present, and one is told that there was much of the confusion that has sometimes accompanied great military emergencies. High praise is due the physicians of Ithaca, who, under such adverse circumstances, must have been severely overtaxed. With less than 30 physicians in the town and with sometimes over 400 typhoid patients added to their usual work, the conditions of the work can be understood. The highest appreciation of the efforts of the physicians was everywhere expressed. Whatever may have been their opinion as to the nature of the epidemic in its beginnings, there is no reason to believe that individual disinfection and prophylaxis were neglected, and, as already said, many of them showed themselves fully alive to the situation from the very first.

A particularly fortunate element was introduced into the situation by the arrival of Dr. George A. Soper of New York, representing the New York State Board of Health. The situation was one eminently demanding energy and great judgment. Dr. Soper won from the outset the confidence of all factions and immediately infused a spirit of system and hopefulness into the whole city. A particularly active campaign has been waged under his direction against the possibilities of secondary infection, and if the reforms suggested and initiated by him are carried into effect, Ithaca should be the cleanest and most ideally hygienic town in the state of New York. Only the highest praise can be awarded to the character of the methods, both physical and tactical, employed in this work. It is certainly one of the hopeful signs of the times that a man of practical experience and energy, combined with scientific knowledge, should be placed in a position of authority.

SECONDARY INFECTION.

The presence in Ithaca of the enormous number of typhoid bacilli generated in the bodies of 700-800 patients caused much concern among those conversant with the methods of spread of typhoid fever. The well-known dangers of secondary infection, a term generally applied to direct transfer of the specific bacilli from one individual to another through carelessness in disinfecting the discharges, were undoubtedly very great. The peril of further spread of the disease by this means was early appreciated, and a warfare against filth of every description was waged, and the discharges of typhoid patients were rigorously taken care of. Owing to energetic and efficient methods, the opportunities for secondary infection have been greatly diminished, and the aftermath of such cases will probably be much smaller in Ithaca than in most typhoid epidemics.

As to the part that has been played by secondary infection in originating cases of typhoid during the course of the epidemic, opinion is at variance. The fact that many cases developed among the members of one household or among the students in the same fraternity house or boarding house, together with the fact that in

some cases a definite interval elapsed between the infection of different individuals has seemed to some to indicate that secondary infection has been of rather frequent occurrence. On the other hand, it is pointed out that the large number of individuals residing in a single boarding house lessens, somewhat, the value of the evidence derived from the appearance of many cases at the same house number, and it is also noted that the interval elapsing between the successive cases has been almost invariably less than the average period of incubation for typhoid fever. There can be no question that in this, as in all extensive outbreaks of typhoid fever, secondary infection has played a part, but there does not seem any reason for assigning it other than a strictly subordinate rôle. Cases of this character, however, would undoubtedly have been more numerous in the later stages of the epidemic but for the methods of prevention already alluded to.

THE OUTLOOK FOR A PURE WATER SUPPLY IN ITHACA.

Public opinion in Ithaca has become thoroughly aroused, and town and university authorities have been working with notable zeal to obtain a pure water supply. The revulsion of feeling over the use of surface water has led to an enthusiastic attempt to obtain a supply from artesian wells. A citizens' committee has taken up this matter with great vigor, and under their direction wells are now being drilled at different points in the valley, with the aim of securing an exceptionally pure and abundant supply. It is said, however, that competent engineers who have examined the locality are unable to secure any evidence that a supply satisfactory in quantity and quality can be derived from this source. Experiments are now in progress designed to determine this point, and, since there exists an overwhelming sentiment among the inhabitants of Ithaca in favor of deep well water and against surface water, the question is likely to be probed to the bottom.

At the same time that wells are being drilled in the valley a plan for filtering the water of Six Mile Creek is well under way. The water company has secured as consultant Mr. Allen Hazen, who has had large experience in matters of water purification and who is well known as the designer of the filtration plant now in successful operation at Albany, N. Y. Any measure carried out by his advice and under his supervision may be received with entire confidence by the people of Ithaca as a satisfactory solution of the problem. A slow sand filter, constructed from Mr. Hazen's designs, will unquestionably assure the city a supply of pure and wholesome water. It is expected that a thorough inspection of the watershed will go hand in hand with the preparations for filtration and that many improvements will be carried out along the banks of this stream. When this is effected and the filter plant is in operation under competent management, typhoid fever should practically disappear, and "Ithaca fever" be relegated to well-deserved oblivion.

The university authorities have determined to depend no longer on the supply of raw water from Fall Creek, and are installing a small mechanical filter which will be completed in a few weeks, and which is expected to ward off the possibilities of danger from this source. During the epidemic the university has supplied artesian well water for the drinking tanks in the campus buildings, and to its prompt action in this respect a considerable degree of immunity among the students during the later stages of the epidemic must be attributed.

Among the many persons in Ithaca to whom I am under obligations for friendly courtesies, I wish to express my especial indebtedness to Prof. V. A. Moore of Cornell University, who has generously placed at my disposal much information concerning the epidemic, and also to Dr. George A. Soper, who has kindly aided me in the course of my inquiries in many ways.

POSTSCRIPT.

The epidemic is now, March 30, to all appearances, at an end. Only fourteen new cases have been reported since March 11, and during the last week there have been only four. The revised and corrected tabulation of cases on the best information obtainable is as follows:

	Students.	Citizens.	Total.
Cases in Ithaca.....	124	660	784
Cases outside of Ithaca.....	106	22	128
Total	230	682	912

The corrected list of deaths to the present date is as follows:

January 23 to January 29.....	1
January 30 to February 5.....	4
February 6 to February 12.....	7
February 12 to February 19.....	12
February 20 to February 26.....	11
February 26 to March 5.....	10
March 6 to March 12.....	5
March 13 to March 19.....	5
March 20 to March 26.....	2
March 28.....	1

Total 58

Twenty-six of this number were students in Cornell University.

New Instruments.

A NEW NASAL SPECULUM.

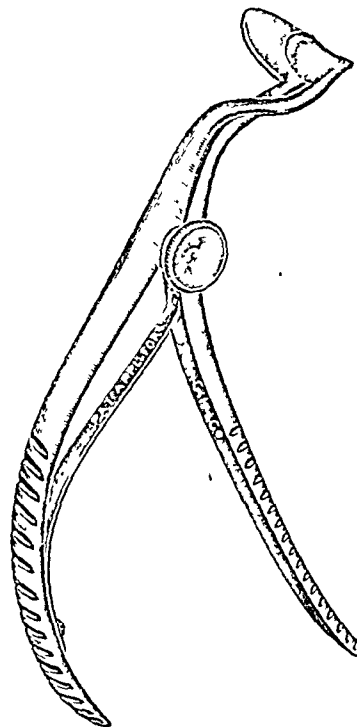
O. B. MONOSMITH, M.D.

LORAIN, OHIO.

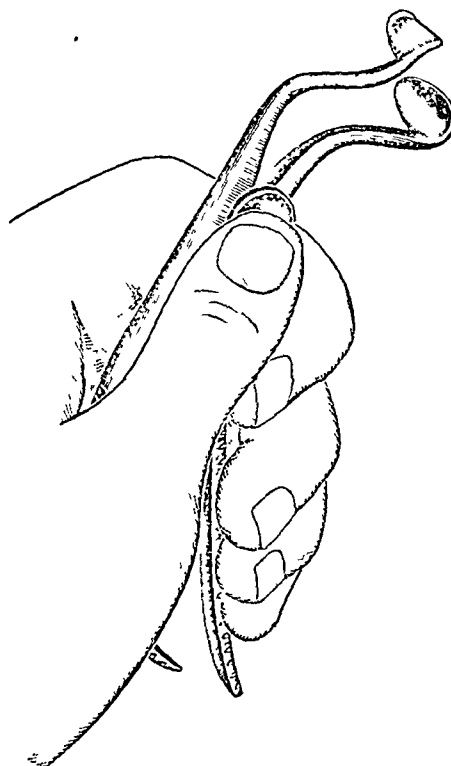
Realizing that the bivalve speculum, opening transversely, did not meet all of the requirements of a nasal speculum, I was led to devise one for my own use that would overcome these difficulties. That I have succeeded, at least to my own satisfaction, is the excuse for presenting it to the profession. Its evolution extended over a period of about three years, during which time I made many modifications. The model, a cut of which I present, I have used about a year, and, in the majority of nares, it meets all of the requirements of an ideal speculum, both diagnostic and operative. It has merits that will appeal to the specialist as well as the general practitioner.

The instrument is to be held in the left hand of the operator for both nares, with the ball of the thumb on the screw head, thus giving a firm hold of the instrument without necessarily forcing the blades apart. By holding the instrument in this

manner the blades open vertically. The advantage of this is that it raises the tip of the nose, giving a more advantageous angle of illumination and a better view of the nasal cavities. Another advantage is that the blades do not touch the mucous membrane. It will be seen that the upper blade is much shorter, and is placed somewhat back of the lower blade. It is also hooked slightly upward. This is, perhaps, the most important feature of the instrument. Being shorter and placed back of the lower blade, it conforms perfectly to the



anatomy of the nose, allowing both blades to enter the nose without leaving anything outside that is superfluous. The blades being attached to the shanks at right angles, prevent their being forced inward against the mucous membrane, and the upward curve of the upper blade prevents the speculum



slipping out at inopportune times, especially while operating. It may be noted, in passing, that with any bivalve speculum it is occasionally necessary to clip out the hair that is sometimes found in the anterior nares, in order to get a perfect view of the nasal cavities. A patent has been secured on the instrument, with the sole purpose of giving the control of the

manufacture to one instrument house that can be depended on to make it right, otherwise the merits of the instrument would be spoiled. As to the wisdom of this, I refer to an article in THE JOURNAL of the American Medical Association, vol. xxxvii, p. 1336, by Dr. Frank Allport, in which he writes: "As it is now, the moment he publishes an instrument all manufacturers have a right to make it, and, before long, the instrument on the market bearing the inventor's name may be so far removed from his original idea as to make him ashamed that he ever gave it to the profession."

THE THIERY CLAMP.

A SUBSTITUTE FOR EXTERNAL SUTURES.

ANDREW B. GLONINGER, M.D.

Surgeon to Good Samaritan Hospital.

LEBANON, PA.

I would like to give your readers the benefit of an idea that I picked up in Paris last summer at Professor Thiery's clinic. It is a little clamp, invented by Thiery to take the

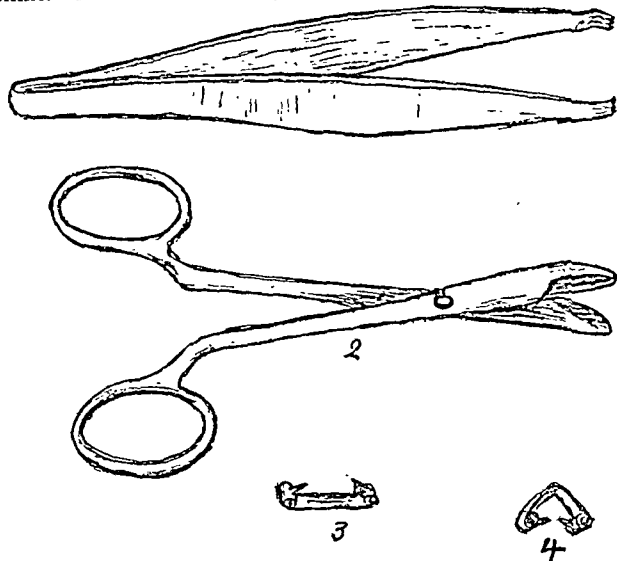


Fig. 1.—1. Forceps for applying clamps. 2. Forceps for removing clamps. 3. Clamp before application. 4. Position of clamp when in use.

place of superficial sutures, which saves time in closing incisions after operations and prevents troublesome stitch abscesses.

The clamp itself is a narrow strip of soft non-corrosive metal $1\frac{1}{4}$ cm. in length, the ends curled and armed with little spurs.



Fig. 2.—1. Showing the clamps in place after an abdominal section. 2. Showing the clamps holding a flap in place, reinforced by silkworm-gut suture at points where tension is greatest.

The two skin surfaces to be united are held in apposition between thumb and forefinger and the clamp, held in the grasp of a heavy claw-tipped dressing forceps, is pressed lightly against the adapted edges and pinched on with slight pressure. The little instrument bends easily, and the points enter the skin, holding the edges firmly together. They should be removed on the fourth day. For this an ordinary small hemostatic forceps will do, but the forceps specially designed for the purpose has a prominence on one jaw and a depression in the other; the grooved jaw is slipped under the clamp, and when the other is closed on it it bends back readily into its original

shape with very little annoyance to the patient, leaving only a small cicatrix along the line of incision.

The outfit, including the two pairs of forceps and 500 clamps, cost me 20 francs in Paris. They can be used in all sorts of incised wounds where the tension is not great.

In abdominal operations they are the ideal suture. In fifteen sections I had complete union in four days in all but one, in which I had used some deep sutures on account of an unusually thick layer of fat. Following an amputation of the breast, I use two or three silkworm-gut sutures where there is tension and finish with clamps. I have had good results in closing incisions after phlebotomy for transfusion or for the ligation of varicose veins, and I tried them in two cases of amputation of the leg, but the grasp did not seem to be strong enough to hold the flap, and the result was not very satisfactory. They are specially well adapted for incisions of face, scalp and neck on account of the small cicatrix.

The misconstruction of the Code of Ethics which enjoins physicians against the methods of advertising like the quacks, i. e., by offering to give public advice to the poor gratis and by private cards or public handbills proclaiming one's skill to cure special diseases, has deterred capable physicians from imparting the kind of information they ought to impart on all proper occasions to the public. Up to date the public has obtained most of its knowledge indirectly from published accounts of epidemics, etc., and what health boards are doing and from occasional newspaper extracts from medical society proceedings selected on the judgment of non-professional and of inexperienced newspaper reporters and from the alarming, overdrawn and often perverted statements made in quack advertisements. Often the first and only knowledge of what the medical profession is doing gets to the public through the last-named mercenary channels, who often pay tribute to the great work of the medical profession by indirect reference to the merits of its dead masters and by naming their quack establishments and more or less fake remedies after our great names. For we know, though the public does not, how many of the patent medicine men of our time have been simply drug store clerks or bottle washers or porters sometimes in physicians' offices, evolved and transformed into patent medicine proprietors and kings of gullibility and Napoleons of fake finance founded on humbug—folly in matters medical and fake healing with the people, because we who have the light to shed give it not, but leave the popular medical world in darkness.—"Alienist and Neurologist."

The proportion of accidents and disease is brought out by an analysis of a recent census report made by the "Insurance Press," from which we learn that deaths due to accidents and injuries were highest among those whose mothers were born in Italy (119.5 per 100,000 of white population); lowest among those whose mothers were born in the United States (62.7). The death rate due to accidents and injuries is highest among persons 45 years of age and over. The average age at death from accidents is about 33.5. The proportions of death from accidents and injuries were greatest in the Cordilleran regions, the Pacific coast region and the Western plains; they are least in the North Atlantic coast region, the Middle Atlantic coast region and the Northeastern hills and plateaus. The warmer months show a larger proportion of fatal accidents than the cooler months. A person is more liable to meet death by accidental injuries than by any other single cause, except tuberculosis, pneumonia or heart disease. One is twice as liable to die from accident as from old age Typhoid fever, cancer, apoplexy, inflammation of the brain and meningitis, paralysis, diphtheria, diseases of the stomach, liver and brain, all these are slight menaces to life compared with the accident hazard. If, as seems not unreasonable, a person is liable to die of any disabling accident that happens to him, what is to be said concerning the 11,000,000 accidents that happen every year. It seems to be true that a person is 100 times more liable to "catch" an accident than a fatal case of tuberculosis or pneumonia, and about 1,000 times more liable to "catch" an accident than a fatal case of liver disease.—"Amer. Medicine."

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INVESTMENTS FOR PHYSICIANS.

It is a matter of common remark among bankers and business men that physicians, more than members of any other profession, unless it be the clergy, are prone to make unwise investments of their savings. Medical men, it is true, are among the most far-seeing of individuals as far as the judgment of the character of their fellow-man is concerned; in general, they are noted for the common sense they display in the ordinary dealings of life. Too often, however, the sense of proportion seems to abandon them when it comes to matters relating to their financial welfare. The reason is largely, in our opinion, to be found in the widespread misunderstanding which exists among members of the profession regarding the fundamental principles underlying investments. How often in moving among medical men do we hear comments on "investments" in mining stocks, in oil wells, in rubber plantations or in industrial companies of various types. It is no unusual occurrence to be recommended by a friendly-disposed fellow practitioner to remove our accumulated little surplus from the savings bank and to buy ignis fatuus oil stock that is paying 12 per cent. dividends, or to sell our Chicago & Northwestern railway bonds and purchase Guatemala rubber and coffee stock at 50 cents per share because it is announced that the price will be advanced to 75 cents next month. The promoters of these will-o'-the-wisp concerns are only too well aware of the ease with which large numbers of medical men can be induced to venture in them; that they make good use of medical directories the daily mail of every medical man in the country attests.

It is doubtless to the credit of the majority of medical men that they are ignorant of the details connected with the selling of stock and bonds, that they know nothing of "puts" and "calls," and that the "short interest" and "stop-loss orders" are terms which are mysteries to them. A man to be well versed in all the minutiae of Wall street or La Salle street should give his whole time to the occupation and he will be fortunate then if he learns how to trade with profit. The physician who is to be a success in his profession and an honor to it, must give as much time and thought to that profession as old John Graham advised his son to give to pork. If he attempts to speculate in stocks and to practice medicine at the same time he may not be the most closely-shorn of the "lambs" in the street, but he will almost certainly

deteriorate as a physician in the homes of his patients.

It is important to distinguish between "investment of savings" and "investment for large profits." In the latter instance over-ambition is likely to lead to indulgence in semi-speculative investments or to the yielding to pure speculation in so-called securities which are really nothing more nor less than gambling counters.

If Simeon Teluya of the Province of Moncostenango in Guatemala were to write to a thousand physicians and ask each one of them to lend him a hundred dollars, it is very improbable that he would receive favorable answers to his request; at any rate, before loaning the \$100 to a man unknown to him and living so far away, inquiry would first be made as to the reliability of the man and the security of such a loan. But let Simeon Teluya stake out a few acres of Guatemala highlands or marsh, and, with the help of an enterprising American promoter who has a couple of hundred dollars with which to begin a new scheme, organize a company with \$3,000,000 capital, advertise broadcast that rubber trees which have been planted are rapidly developing and that meanwhile the yield of coffee will speedily make dividends possible, send printed prospectuses to physicians stating that this month is the last opportunity to secure "treasury stock," and that next month the price of each share will be doubled, and it is surprising how many "conservative" men, without investigating in the slightest way Simeon or his plantation, will mail their checks for the stock.

Now there can be no doubt that some rubber plantations are exceedingly profitable and that there have been mines and oil wells which have turned small investments into great fortunes. Many of the ventures exploited represent opportunities of actual value; more of them have an honest purpose behind them, but ultimately prove unprofitable, but those who have watched the course of such concerns most closely tell us that a "large proportion of such offerings afford little or no return to the public who risk their money in the scheme."

Safety of the principal is of much greater importance than large dividends or a high rate of interest. Rather than run any large risk it is better to be satisfied with the small rate of income which pertains to the so-called "widows' and orphans' investments," such as are provided by savings banks, government and conservative municipal bonds, endowment insurance in first-class companies, or first mortgages on real estate worth twice the face of the mortgage, and which is producing income considerably in excess of the interest on the mortgage and is owned by some one who has other property than that on which the mortgage is held.

Certain bonds and stocks can be purchased with safety; others are risky. One of the most important principles which should be grasped is this: It is never wise to invest in securities of which one can not have full

knowledge. This is why it is better to invest in the securities of local companies which serve essential local needs, like light, water and transportation; for the physician if he invests in his own town or city, ought to be better able to make sure whether or not the companies whose bonds he purchases are honestly and economically managed, than if he buys the bonds of companies operating in distant cities. He should study the company's reports, be sure that he understands what every item means, keep in close touch with the officers thereof and know as much as possible of the nature of the business. The advantages of seeking all one's business profits within the range of his own immediate and more or less expert observations can scarcely be over-estimated. The securities of companies, and especially of industrial concerns, which avoid publicity, and of which no adequate account of resources and liabilities, of relation of fixed charges to net earnings, and of relation of dividend distributions to surplus earnings can be obtained should be shunned as assiduously as the substitution of morphin for quinin.

A second fundamental verity with regard to investments is to be found in the fact that "the return on a security always indicates the measure of the risk." An examination of the yield of different classes of bonds will show that government bonds return about 2 per cent.; high-class municipal bonds about 3 per cent., and railway bonds of the best class from 3.25 to 4.5 per cent. If on inquiry a bond or stock be found to be selling at a price which permits of a net yield of over 5 per cent. it is either because there is a limited market for the security or the investing public doubts the stability of the return. Occasionally there is to be picked up a really safe security which yields more than 5 per cent. net return, but this is rare, and there is always some special reason to account for its cheapness.

A third law of investments is this: A large proportion of new business undertakings fail; it is therefore rarely wise to put money into any new enterprise. Such a disposition of money must be looked on as speculation rather than as an investment. It is much safer to limit one's purchases to the bonds, for example, of railways and corporations, which, through a series of years (including a period of hard times), have demonstrated their ability to pay all their fixed charges with 60 per cent. or less of their net earnings. If the stocks of first-class railroads are ever purchased (and they are, of course, always much less safe than the bonds of the same roads) the investor should first make sure of the margin of safety of surplus earnings over dividends; if, after all fixed charges have been paid, more than 60 per cent. of the surplus earnings have been distributed as dividends at any time during the preceding five or ten years, the stock should not be bought as a prime investment.

Fourthly, a physician should never intrust money for investment to any person or company who offers to place great skill in reading the markets at the disposal of the investor in exchange for a practical part of the large profits promised. Discretionary pools, trading syndi-

cates and all such "get-rich-quick" concerns are to be avoided as one would the arch enemy. Promises of 10 per cent. return or more monthly are to be regarded as opportunities for falling into a snare, and the snare is very often a tangle which ends in disgrace. If discretionary pools had that clairvoyant knowledge of the immediate movements of the market which would permit them to make the money for their clients that they claim, they would be in the market entirely on their own account, and not be wasting time working on small commissions for other people. Fortunately the postal authorities are ridding the country of the worst of these pests as fast as their attention is called to them.

In conclusion, if medical men would learn to follow the advice of a sage counselor and "lend no money as a favor to anyone unless you are willing and able, if need be, to give the money outright; to have no business dealings with your relatives in which business and sentiment are mixed up; sign no notes and assume no financial responsibilities for other people . . . and never put a large part of your savings into any one investment," there would be many fewer heart burnings in old age and many happier physicians' families than there are to-day.

THE NOMENCLATURE OF CYTOLYSIS AND BACTERIOLYSIS.

The terms intermediary body, complement, etc., have appeared repeatedly in these columns in discussing some of the phenomena of the reactions of immunity. Although the functions of these bodies, which are made clear by certain observed phenomena rather than through the isolation of tangible substances, are now fairly well understood by scientific workers and general readers, there is among the contributors of various countries a reprehensible lack of unanimity in the terminology employed. This must needs lead to a degree of confusion among medical men in general in their attempts to grasp a problem which, primarily, is not simple.

In view of this, a brief consideration of the nomenclature of immunity seems appropriate. It is now generally understood that so-called cytolytic and bacteriolytic serum contains two substances, one thermostabile, and one thermolabile, which is destroyed by about 56 C. for thirty minutes. The thermostabile substance combines with the cell (animal or bacterial) for which it is specific, gaining entrance through the theoretical cell "receptors," of which every cell has a great variety. After this union has taken place, something happens by means of which the thermolabile substance in some way can enter or be joined to the cell and produce its solution. Without the first step the second can not occur, and they must occur in this order. We have, then, to do with three different "bodies" in the process of cytolysis: the cell with its receptor, the thermostabile body (intermediary body or amboceptor), and the thermolabile body (complement).

The amboceptor or intermediary body has a certain amount of complexity in that it has two different affinities, one for the cell and one for the complement. It has been supposed that these affinities reside in definite molecular groups of the amboceptor, and, in accordance with their function, they are called binding groups (haptophorous groups or simply haptophores). The group with affinity for the cell is the cytophilous, for the complement the complementophilous group of haptophores. Now the amboceptor, under certain circumstances, may undergo a kind of degeneration, in that it may lose its binding group on the one hand for the cell, or on the other for the complement. The degenerated body is an *amboceptoid* (Wechsberg).

The complement also is not simple in its constitution. It is the active or digesting substance of an immune serum, the amboceptor being an intermediary body. It has been shown that the complement degenerates spontaneously with ease, losing its power to cause lysis, but retaining the power to combine with the complementophilous group of the amboceptor. In this way the amboceptors are used up, and active complements which may happen to be present can not come into play. The degenerated complement is called *complementoid*. Although it is inactive in this form, when injected into animals it is able to give rise to the formation of *anti-complement*, because it retains its haptophorous group. That part of the complement which digests the cell, and is so sensitive, is the toxophorous group, or the toxophore.

Various sera are designated thus: bacteriolysin, hemolysin, leucolysin, spermolysin, endotheliolysin, and so on through the whole list of available cells. The amboceptors are the specific elements in these sera, and while some are present normally they are produced to an enormous degree in immunization; complements seem to be less specific and are not increased in immunization.

The relationship of animal species has made necessary another group of names. If the serum or fluids of an animal will dissolve its own cells the phenomenon is called autolysis; if a member of a species can naturally, or through immunization, cause lysis of cells of another member of the same species, isolysis is spoken of; and heterolysis, if the serum dissolves the cells of an animal belonging to a different species. The respective amboceptors are autolysin, isolysin, and heterolysin.

Agglutinins, precipitins and coagulins are additional bodies which are produced by injecting animals with different substances. They are simple compared with the amboceptors, and are called uniceptors, having a haptophorous group and supposedly a toxophorous (agglutinophorous); thus they have a structure similar to that of complement and also of toxin, which latter can not be discussed now. Certain bacteria produce in bouillon cultures substances which dissolve or agglutinate animal cells, giving rise to the terms bacterio-hemagglutinin, etc., in distinction to serum-agglutinins. Bacteria may also form other substances of this kind, for example, the staphylococcus forms a staphylohemolysin and a staphy-

loleucolysin (leucocidin). There is also a specific precipitin which is produced in the serum of an animal immunized with certain micro-organisms; bringing such a serum in contact with the fresh filtrate of bouillon cultures of the microbe in question gives rise to a precipitate (Kraus).

By way of summary, one may say that the products of immunization are antitoxins, antiferments (antirennet, etc.), coagulins and precipitins, agglutinins, and cytoly-sins or cytotoxins; of these the cytoly-sins require the united action of two separable substances, amboceptor and complement. Of these bodies, the following allow the production of special antibodies: coagulin, precipitin, agglutinin and cytoly-sin. An anticytolytic action may be due to the presence either of an antiamboceptor or an anticomplement.

This is surely a complex mass of names and the object of these remarks is solely to call them to mind, but the early confusion disappears for the most part when the principles have been mastered. However, various synonyms have continuously crept into literature, particularly in dealing with the thermostabile body of cytolytic serum. "Antikörper" (antibody), "Immun-körper" (immune body), "Zwischenkörper" (intermediary body), and "Amboceptor" have been applied successively to it by German writers. Bordet and the French school generally use "substance sensibilisatrice" (the substance which sensitizes). However, Metschnikoff introduced "philocytase," then later concluded that "fix-ateur" represented the function of the body better. We can not conceive what subtle properties the amboceptor may possess by virtue of which London's "desmon" (Gr., a bond) may be better suited than Mueller's "copula" (Lat., a bond). Let us hope we have seen the last in Gruber's "Präparator."

Nor has the complement been spared. Buchner's "alexine" (Gr., to ward off) formerly represented the whole bactericidal property of the blood before specific cytotoxicity was understood. The French, some Russians and Germans now use it as Ehrlich has used complement, since he abandoned "addiment." Metschnikoff has invented "cytase" out of respect to the supposed cellular (phagocytic) origin of the substance.

In view of the prevailing and growing custom in America, it seems that we are destined to use amboceptor or intermediary body and complement. Amboceptor seems preferable to intermediary body, because the anti- is so conveniently prefixed and the -oid added. As to the state of affairs in Europe, it is to be hoped that the minority will be willing in the course of time to render back their carefully culled but unnecessary names to their source—the lexicon.

LESSONS OF THE EPIDEMIC AT ITHACA.

If the deplorable occurrences at Ithaca are to serve any useful purpose in the economy of nature, it must be to point a moral rather than to adorn a tale. If we

draw lessons for our own behoof from the calamity of other people, it is not with the intent to increase in any way the burden of the afflicted town, but simply with the desire that other municipalities may heed while there is yet time the plainest of the lessons that are taught by the experiences of Ithaca.

The outbreak has already had a remarkable effect in stimulating the authorities of many other towns to inspect and guard more closely their own supplies of surface water. A searching of hearts among the officials in charge of water works is going on all over the country. Clippings come to us all the way from Connecticut to California, showing that municipal water supplies are being looked into as never before. In the city of Buffalo, for example, an active discussion is being carried on at the present moment as to the relative desirability of constructing a filtration plant or pushing the water intake farther into the lake. Rochester, Auburn and many other places in the state of New York are considering measures for the betterment of their supplies.

The authorities of several of the large universities are fully awakened, it is said, to their responsibilities, and are increasing the safeguards which are already in some instances thrown about the water supply of their respective student bodies. The wide publicity given by the Ithaca epidemic to the danger that always lurks in an unguarded surface water in a populous district can have no other than a beneficial effect. The constant menace from an unprotected surface water is one of the most obvious of the lessons to be drawn from the Ithaca outbreak.

In some quarters much stress has been laid on the circumstance that the water supply of Ithaca was in the hands of a private corporation, and more or less cogent arguments for municipal ownership have been deduced from this fact. The reversion of opinion on this point at Ithaca is worthy of note: Feb. 27, 1902, the town voted against municipal ownership of the water works by a vote of 718 to 583; while at a special election, held March 2, 1903, the vote stood 1,335 for and only 30 against. There is undoubtedly much to be said in favor of the municipal ownership of public water supplies, and whatever may be one's opinion as to the desirability of municipal ownership of public utilities in general, it must be admitted that the arguments for the ownership of water supply are far stronger than in the case of transportation or illumination facilities. We can not help believing, however, that the introduction of the question of municipal ownership into the present discussion really obscures the true issue. It does not seem to be a question of municipal ownership *per se* that is here in question. Many cities that have owned their water supply for years find themselves in a much more helpless position than Ithaca in respect to controlling the general quality of their supply. It is certainly not true that municipal ownership of water works insures a good supply, or that private ownership necessitates a bad one.

The plain lesson here, and the lesson that, for our part, we should emphasize most strongly, is that both municipalities and private water companies must learn to resort habitually to expert opinion and to accept it when secured. Perhaps the most depressing feature about the management of our cities is the continued failure of the authorities to avail themselves of competent opinion and advice. The good old American custom of assuming that any man's opinion about any matter is as good as any other's, is one that can hardly be carried over into the twentieth century without considerable danger to our national prestige. In matters involving life and health, especially, there is no place for the amateur. City aldermen, college trustees, even physicians without special training in modern hygiene, must all give way eventually to the definitely trained and experienced expert, who can advise with knowledge as to the proper means of safeguarding a water supply or stamping out an epidemic. If those possessed of local authority in such matters would devote themselves to securing precise information concerning the men in whose judgment confidence can be placed, rather than in endeavoring to form for themselves in a few days or weeks an opinion about questions for the proper consideration of which an elaborate and special training is required, the result of their deliberations would be less often either grotesque or disastrous. Reliance on those who know, rather than on those who pretend to know or think they know, is the lesson to be most seriously taken to heart by municipal authorities at the present moment. The requisite information and engineering skill for all public works involving the protection of the public health can easily be obtained, and no fancied exigencies of local or national politics should be allowed to block the way when the lives of human beings are at stake.

A POSSIBLE LEGAL DISTINCTION.

A new question may arise for our technical judges to decide. It is reported that the amended law of North Carolina is so worded as to exempt those "who 'cure' the sick or afflicted by spiritual means alone." It apparently makes no provision for those who only "treat" the sick by such means. As a lay contemporary pertinently asks: "Does it apply in case the patient dies?" The Eddyite or mental healer might find himself still under the law if he had bad luck with his case. It is a little remarkable that the persons who were influential enough to obtain the exemption as stated did not see the possibility of the embarrassing complication. We await the decision of the North Carolina courts with trepidation.

TOTAL ABSTINENCE AMONG BARTENDERS.

A total abstinence society of bartenders has been formed in Chicago, its objects, as set forth, being to promote temperate habits among bartenders, to set a good example to the customers, to protect the cash register and stock, and to elevate the calling. Bartenders are not considered good risks in insurance companies on account of the dangers of their business, there-

fore the promotion of temperate habits among them has a very sensible sort of egoistic motive. To set a good example to the customers, however, by being total abstainers as a business proposition is one which we should think would not be encouraged by the bartenders' employers. It is hardly likely that they would want their customers to become total abstainers. The elevation of the calling is, of course, another question. Whether a calling which discredits itself by the conduct of its own followers can be specially elevated in this way may be a matter of some doubt.

IS SALICYLIC ACID AS A FOOD PRESERVATIVE HARMFUL?

Elsewhere¹ in *THE JOURNAL* appears an abstract of an article by Drs. MacAlister and Bradshaw of Liverpool, on the effects of salicylic acid as a food preservative. Their conclusions are positive and, as they say, they speak with a due sense of responsibility. According to their views, salicylic acid, in the ways in which it is used in the preparation of food products, is not only not harmful, but is a preservative to health, inasmuch as the process of decomposition which it prevents would be far more dangerous. Their argument seems to be fairly well taken and their experiments reasonably conclusive. They show by their experiments that digestion *in vitro* is scarcely perceptibly hindered by saturated solutions of salicylic acid and that the effects of small quantities on the living subjects are practically negligible, according to their own personal experiences and observation and those of Kolbe, whom they quote. The question of food preservatives is one that is of general interest and the communication, therefore, has a certain specific value. One of their arguments is that a large number of popular non-alcoholic beverages are possible with the use of salicylic acid, and are useful substitutes for the stronger alcoholic drinks. The use of salicylic acid, therefore, is in direct line with the temperance cause. On this point they lay much stress. There is a certain use of salicylic acid to which this argument does not apply, and that is in certain drinks in which a decided percentage of alcohol is used. If the amount of salicylic acid thus taken either in these "temperance drinks" or in the alcoholic ones is not harmful, then it is probably not harmful in food in the way it is used, especially the small quantities in condiments, such as catsup, etc., in which it is principally employed. What is said of the harmlessness of salicylic acid is probably equally true of several other antiseptics used as food preservatives. Dr. Tucker's paper, abstracted in a very recent issue of *THE JOURNAL*,² while conservative as to their use, deprecates any extreme legislation on articles which are not generally conceded to be harmful. It would not be a bad idea, however, as he suggests, to require manufacturers of all substances containing these preservatives to have the proportion used stated on the labels.

1. See page 942 of this issue, abstract 11.
2. *THE JOURNAL*, March 28, p. 875.

Cocoonut As a Vermifuge.—A diet or a free ingestion of cocoonuts is said, in many of our exchanges, to destroy tape worms. The item is quoted without credit or authority, and the question naturally arises whether the simple remedy is efficient and who has proved it.

Medical News.

DISTRICT OF COLUMBIA.

Georgetown University Hospital Addition.—Ground has been broken for the extension to the Georgetown University Hospital building. The addition will be 100 by 35 feet.

Addition to Garfield Hospital.—Plans are being prepared for the \$100,000 addition to Garfield Memorial Hospital, which is to be four stories high and of brick and stone construction.

Law Against Spitting.—After a public hearing, the commissioners have adopted a health regulation prohibiting spitting on the sidewalks. The law already in force prohibits spitting in street cars, public vehicles and public places under control of the district.

Health of the District.—The report of the health officer for the week ended March 21 shows the total number of deaths to have been 111, of which 73 were white and 38 colored; 78 births were reported, of which 50 were white and 28 colored. At the close of the week there were under treatment 86 cases of typhoid fever, 10 of scarlet fever, 8 of diphtheria, and 7 of smallpox.

Medical Inspectors for Schools.—The district appropriation act approved March 3, provides for twelve medical inspectors of public schools, four of whom shall be of the colored race, at \$500 each, with the proviso "that said inspectors shall be appointed by the commissioners only after competitive examination, and shall have had at least five years' experience in the practice of medicine in the District of Columbia."

ILLINOIS.

Smallpox at Greenfield.—Dr. Archie W. Barker, Springfield, who was sent by the State Board of Health to Greenfield to investigate the smallpox conditions there, reports that there are twelve cases in the village.

State Society Incorporated.—The Illinois State Medical Society was licensed to incorporate by the Secretary of State, March 24.—The incorporation is not for profit, and the object is to promote the science of medicine. The principal office is to be in Springfield. The incorporators are Drs. David W. Graham, Chicago; Carl E. Black, Jacksonville and Otho B. Will, Peoria.

Chicago.

Practiced Without a License.—Leon H. Dombro, a Russian, was fined \$100 and costs, March 23, for practicing medicine without a license.

Generous Pledges.—Dr. Frank Billings announces that one individual has offered to give \$100,000 or a large tract of land to the Children's Hospital Society, and that another person has pledged \$75,000.

Personal.—Dr. and Mrs. George de Tarnowsky have returned from their trip abroad.—Dr. Horace G. Anderson, who has been ill a long time, has been placed in a private sanatorium in Peoria.—Dr. Robert F. Bennett has been adjudged insane and sent to the State Hospital, Elgin.

Bone and Not Lung Tuberculosis.—On account of sensational statements in the daily press regarding the prevalence of tuberculosis in the School for Crippled Children, where it was alleged the majority of the pupils were afflicted with consumption, the health commissioner ordered an investigation, which demonstrated, as might have been expected, that a large proportion of the crippled children were suffering or had suffered from tuberculosis of bones or joints.

The City's Deaths.—The month is barely saving its record as one of declining mortality. The 563 deaths recorded during the week represent an annual rate of 15.58 per 1,000, precisely the same as for the corresponding week of last year, when the death rate was about normal for the season, and 7.9 per cent. lower than that of the preceding week. Pneumonia deaths still continue excessive—100 per cent. greater than those from consumption and 40 per cent. more than last year. The deaths from pneumonia numbered 121; from consumption, 60; from heart disease, 54; from Bright's disease, 33, and from violence, 28.

INDIANA.

Anatomical Board Organizes.—The State Anatomical Board, created by the recent legislature to have charge of the furnishing of corpses to colleges for dissection purposes, held its first meeting in Indianapolis, March 20. Dr. John H. Forrest, Marion, ex-officio chairman of the new board by reason of his position as president of the State Board of Health, presided. The board organized by selecting the following additional

officers: Dr. John H. Oliver, treasurer; Dr. E. F. Sommer, secretary; Drs. F. M. Wright, Collins T. Bedford and T. E. Courtney, trustees.

Recent Sanitary Legislation.—The sixty-third general assembly, which adjourned March 7, passed four bills which were presented by the State Board of Health. The first was an increased appropriation for health work. Six thousand dollars per annum, aside from the salary of the secretary and chief clerk, had been heretofore appropriated. Now ten thousand dollars is given. This makes an increase of four thousand dollars available Nov. 1, 1903. The state board promises to do good work with this money. The second bill, which became a law, and which the board has twice before recommended, is for the purpose of providing ventilation for the state house. The third forward step gained was the passage of the quarantine law. This law leaves very little more to be desired in the way of power given to boards of health for the suppression of infectious diseases. It first provides that physicians and householders shall immediately report such diseases as are required to be reported in the rules of the State Board of Health. It then becomes the duty of the health officer in whose jurisdiction the disease is found to immediately establish a quarantine "so as effectually to isolate the case or cases and the family if necessary, in such manner and for such time as may be necessary to prevent transmission of the disease." The penalty for breaking quarantine or for physicians refusing or neglecting to "take such precautions as are directed in the rules of the State Board of Health" is a "fine of ten to fifty dollars, to which may be added imprisonment in the county jail not exceeding six months." The law requires that all infected persons and premises shall be disinfected at the proper time according to the rules of the state board. School children, "if infected with any communicable disease, or if they have been exposed to any communicable disease," shall not attend school or appear in public; and all school teachers "shall exclude from the schools all such children, unless a written permit to attend is given by the health officer having jurisdiction." Other important provisions are contained in the law.

IOWA.

Invoke the Law.—Dr. Edwin W. Haradon, Jesup, has been sued by Harry Baker of the same place for \$3,000 damages for libel in the form of an information alleging the insanity of the plaintiff.—Dr. Edward S. Burroughs, Marshalltown, has been sued by a husband and wife for \$6,500 damages; the wife alleging mistake in diagnosis and claiming \$5,000, and the husband alleging nothing, but claiming \$1,500.

Adulteration Causes Blindness and Death.—A correspondent sends the following extract from the "Waukon Standard," suggesting that the fatal result may have been due to lemon extract made with wood instead of grain alcohol:

Clarence Floyd, a printer and newspaper writer of Center Point, Iowa, died last week after a protracted period of heavy drinking. Lately he had been unable to purchase liquor, no one daring to sell it to him, but somehow he got hold of two dozen bottles of lemon extract. He drank all but three or four of these bottles and he went blind on the streets of Vinton. Then he grew violent and physicians were summoned. They could do nothing for him and he died in horrible agony.

KENTUCKY.

Jewish Hospital for Louisville.—Jewish individuals and societies of Louisville have already pledged \$24,526 of the \$30,000 required to establish a free non-sectarian Jewish hospital in that city.

Violated Health Law.—For going to church while suffering from smallpox, Henry Welch, a farmer of Fayette County, was indicted by the grand jury, March 18. This is the first case since the passage of the statute.

Commencement.—Louisville Medical College graduated a class of 53, March 24. General Basil Duke was the orator of the occasion; Dr. John D. Miller of Mississippi delivered the salutatory, and Dr. D. J. Maguire of Kentucky was valedictorian.

Prison for Physician.—Dr. Asa P. Taylor, Lexington, president of a defunct mutual deposit company, was sentenced to three years' imprisonment, March 27, for embezzlement. The offense lay in paying a dividend from the surplus fund of the company.

MARYLAND.

Clean Bill of Health.—Dr. Rohrer, who has been in charge of the smallpox hospital at Chestertown for the past month, released all the suspects and patients there on March 27, and Chestertown now has a clean bill of health.

Personal.—Dr. Washington G. Tuck has been reappointed postmaster at Annapolis.—Dr. William W. Golden has been chosen superintendent of the new Davis Memorial Hospital at Elkins, W. Va.—Dr. Henry W. McComas of Oakland has returned from a visit to Hot Springs, Ark. Dr. W. H. Ravenscroft of the same place, who has spent the greater part of the winter in Denver, has also returned.

Baltimore.

Mortality and Morbidity.—The mortality last week was 200, or 16.60 per annum per 1,000 for whites and 37.41 for colored. Pneumonia caused 33 deaths. Two new cases of smallpox were reported, both in negroes.

Damage Suits.—The suit against Dr. Pierre G. Dausch for \$20,000 damages for death following operation, has been dismissed on an order of counsel for plaintiff.—A verdict for \$100 damages has been obtained against Dr. Arthur D. Mansfield by a woman who claimed that the Doctor pushed her violently while attempting to collect a bill.

The Crim Estate.—The personal property of the late Dr. Crim has been appraised at \$48,305. In this is included the large collection of antiques, hitherto mentioned as left in reversionary bequest to the University of Maryland. There are over 1,500 articles enumerated in the inventory, comprising all kinds of furniture and household effects, silverware, paintings, and engravings. The sale of the collection will commence in this city April 22.

Personal.—Dr. Howard A. Kelly will go abroad shortly, to be gone until August. He will attend the sessions of the International Medical Congress at Madrid and will deliver one of the four principal addresses, representing this country. His subject will be "The Passing of a Specialty." He will then go to Glasgow, where he will deliver an address before a medical society, and to Paris, where he will address the French Surgical Society. He will travel extensively through Europe before returning to America.—Dr. Alexander D. McConachie will also attend the Madrid Congress.—Dr. M. W. Glover, U. S. Marine-Hospital Service, who has been assigned as medical inspector to the U. S. Immigration Bureau at this port, arrived from New York March 23.

MASSACHUSETTS.

Homans Memorial.—A meeting memorial to the late Dr. John Homans was held in Sprague Hall, Boston, March 30. Addresses were made by Drs. Richardson, Cabot, Shattuck, Bradford, Edes, Warren and Harrington.

Corey Hill Hospital.—Dr. Joel E. Goldthwaite, Boston, has joined with twelve other Boston medical men and will erect on Corey Hill a fine hospital, to be called the Corey Hill Hospital. It will accommodate about thirty patients and be modern and complete in all its details.

Lowell Typhoid Traced.—The health department of Lowell has traced the typhoid fever which is prevalent there to the milk supplied by a Chelmsford milkman, whose hired man was ill with typhoid. The local authorities have interdicted the delivery of milk from this source in Lowell.

Brigham Hospital.—The new buildings of the Brigham Hospital are to cost more than \$1,000,000, and the income will be about \$150,000 annually. This will be administered by a board of twelve directors recently chosen by the corporation which is styled The New England Trust Company.

Massachusetts General Hospital Staff.—Drs. James C. White, William L. Richardson, and C. B. Porter, who recently resigned from the visiting staff of the Massachusetts General Hospital, have been appointed members of the consulting staff. Dr. James J. Minot has been appointed visiting physician.

Formalin and Bacteria.—The tests made by Dr. Hibbert Winslow Hills, bacteriologist of the Boston Board of Health, on the value of formalin injections to arrest bacterial activity in the body as advocated by Dr. Barrows, indicate that solutions to be efficient must be sufficiently strong to destroy tissues and hence are impracticable.

Unregistered Practitioner Sentenced.—Henry Beltman, who came to America from Germany only a year ago, was sentenced to three months in jail as he was unable to pay a fine of \$100 assessed against him for practicing medicine without being registered according to law. He pleaded for leniency, claiming that he ignorantly infringed the law.

Ten Hours a Day Limit for Nurses.—A bill before the state legislative committee on labor provides that nurses and attendants in hospitals, asylums and sanatoriums shall not be

required to be on duty more than ten hours in the twenty-four, and that if emergency requires such service, corresponding time off during the ensuing week shall be allowed.

Bequests.—Arioch Wentworth, whose fortune is estimated at over seven millions, left \$100,000 to the town of Dover, N. H., for a hospital to be called The Wentworth. The bulk of his estate is to be used in the establishment and maintenance of a great trades school.—The will of J. H. Center, Boston, leaves \$54,000 to charities, prominent among which are the Massachusetts Homeopathic Hospital, Children's Hospital, House of the Good Samaritan, and the Massachusetts Charitable Eye and Ear Infirmary.

MICHIGAN.

From Murder to Manslaughter.—The charge of murder against Dr. Wallace E. Newark, Charlotte, on account of his implication in the death of Mrs. Harriet Wirtz, has been changed to manslaughter, and his bail reduced from \$2,500 to \$1,500.

To Muzzle Dogs.—The Michigan State Board of Health has issued a circular recommending that every local board of health immediately make and publish regulations ordering the muzzling of all dogs at large and the killing of all unmuzzled dogs found at large, and that provision be made for the prompt and effective execution of such regulations.

No Isolation Hospital.—At the session of the Detroit city council, March 28, the proposed appropriation of \$75,000 for a city hospital for communicable diseases was cut out of the estimates for the year. Drs. Guy L. Kiefer, Johnston B. Kennedy and Charles G. Jennings argued for the hospital, and Dr. J. Henry Carstens opposed and prevailed.

University Treats Hydrophobia.—The Board of Regents of the University of Michigan, at a recent meeting, decided to provide Pasteur treatment for hydrophobia, and appropriated \$2,500 for the purpose. Residents of Michigan will be treated free, while patients from other states will be charged what they would have to pay at a private institution. Dr. Thomas B. Cooley, a graduate of the medical department of 1895, will have charge of this work under the supervision of Dr. V. C. Vaughan, director of the hygienic laboratory.

MISSOURI.

Quigg Bill Defeated.—The bill to create four boards of examiners, one for each of four so-called schools of practice was defeated in the house.

Osteopathy Bill Passed.—Both houses of the legislature have passed the bill regulating the practice of osteopathy and providing therefor a state board of examiners, and the bill now requires only the governor's signature to become law.

New Blind Asylum.—The legislature has passed the bill authorizing the sale of the asylum for the blind property in St. Louis and the purchase of a new site. The bill carries an appropriation of \$150,000. Under the provisions of the bill a commission of three will be appointed by the governor to take charge of the matter.

Commencements.—On March 24 Kansas City Medical College graduated a class of 24. Chancellor E. Benjamin Andrews of the University of Nebraska delivered the address to the class. —Medico-Chirurgical College, Kansas City, awarded diplomas to a class of 20, March 19.—The graduating exercises of the University Medical College, Kansas City, were held March 26, when a class of 63 was graduated.

College Merger.—On May 1, 1903, St. Louis University assumes control of the Marion-Sims-Beaumont College of Medicine, which becomes the medical department of the university. St. Louis University founded the pioneer medical college of the Mississippi Valley in 1836; in 1855 its medical school became independent of the university. The revival of its medical school by the acquirement of the Marion-Sims-Beaumont College is a step in the development of the university, and of great importance for the progress of medical teaching in St. Louis.

NEW YORK.

Surgical Pavilion Opened.—The Cochran Surgical Pavilion, an annex to St. John's Riverside Hospital, Yonkers, provided at a cost of \$55,000 by the late William Francis Cochran, was thrown open, March 21.

One-Fourth Consumptives.—In an argument before the legislative committee on ways and means by Dr. Julius B. Ransom, physician to the Clinton State Prison, Dannemora, he stated that one-fourth of the population of the prison is afflicted with tuberculosis.

Nursery and Child's Hospital Bill Unconstitutional.—A bill now before the legislature authorizing the sale of the property of the Nursery and Child's Hospital has been declared unconstitutional by Attorney-General Cunnene. The hospital holds the property under a perpetual lease from New York City, and in view of the encroachments necessitated by the proposed extension of the terminal facilities of the New York Central and Hudson River Railroad the managers of the hospital are anxious to sell the property and purchase another and more suitable site. The legal opinion says that the authorities of New York City might be empowered to effect the sale.

New York City.

Nurses' Home.—The Presbyterian Hospital is about to erect a magnificent six-story home for its nurses. The structure will be located in East Seventy-first Street, near the hospital, and is to cost \$300,000.

In Memoriam.—The alumni of Charity Hospital, Brooklyn, at a special meeting held March 11, adopted resolutions of regard, regret and sympathy on the death of Dr. Earle Woolworth, who was an interne in the hospital in 1897.

Decision Favors Faith Healers.—The Appellate Division of the Supreme Court in Brooklyn has reversed the conviction of J. Luther Pierson of Valhalla, the charge being a failure to provide a physician for his adopted daughter. Judge Bartlett wrote the opinion, which was concurred in by Judges Hirschberg and Jenks. Presiding Judge Goodrich, in dissenting from this opinion, maintained that liberty of conscience should not justify practice inconsistent with the peace and safety of the state.

Tents for Tuberculous.—The president of the department of health has written a letter to the mayor regarding this subject, from which the following excerpts are taken:

During 1902 7,571 persons died of tuberculosis of the lungs in New York City, while 1,312 died of other forms of tuberculosis. In 1901 the deaths from pulmonary tuberculosis numbered 8,135. While the death-rate from tuberculosis was thus gratifyingly reduced in 1902, the disease remains the greatest single cause of deaths in this city. I believe that with an appropriation of \$35,000, which amount will be formally requested by the board of health from the board of estimate and apportionment, I can erect a sanatorium on the tent and ducker plan, with accommodations for sixty patients and fifteen attendants, to be operated from May 1 to Dec. 31, 1903. If this camp should be put in operation and should prove to be successful, as I do not doubt it will, it will then be possible for the city of New York to enter on this method of tuberculosis prevention on a larger scale.

A tract of ninety acres in Orange County, N. Y., has been offered to this department free for a period of two years, and the acceptance of the offer entails no financial obligations on the city.

The extreme cheapness of the tent plan for the care of tuberculosis cases, as compared with the hospital plan, leads me to believe that if the work is taken up under the auspices of the New York City government it will be adopted by many other cities of the United States.

PENNSYLVANIA.

To Enlarge Hospital.—It is proposed to enlarge the Bryn Mawr Hospital and subscriptions are being secured for this purpose.

Smallpox on Steamer.—The British steamer "Riverdale," on its arrival at Delaware Breakwater, signaled that smallpox had broken out among the crew. The vessel was taken charge of at Reedy Island Quarantine.

Hospital for Allegheny.—Allegheny is soon to have a general hospital. The main building will be seven stories high, and there will be separate one-story buildings for contagious diseases and for a laboratory and autopsy room.

Hospital Bill Passed.—A bill passed by the legislature and recently signed by the governor gives municipalities the right to acquire property, either within or without their limits, on which to erect hospitals, or for the purpose of waterworks or for poor-farms.

Philadelphia.

Hospital Staff Change.—Dr. David D. Stewart has resigned as visiting physician to the Protestant Episcopal Hospital and Dr. Charles H. Weber has been appointed to the place.

Phototherapy at the Polyclinic.—The Polyclinic Hospital has established a phototherapeutic department and will treat without charge a limited number of appropriate and deserving cases.

Health Report.—The official health report for the week ended March 28 shows a decided decrease in the number of new cases of typhoid fever, there being only 154 new cases, as against 247 for the previous week. There was an unusual number of new cases of diphtheria and scarlet fever, 54 of the former and 94 of the latter. There were 31 new cases of smallpox. The general mortality was high.

To Raise Standard.—At the regular meeting of the Philadelphia County Medical Society, March 25, a resolution was adopted urging the passage by the legislature of the Ray bill now before the senate. The bill provides for higher preliminary requirements for those entering medical colleges. One provision of the bill, which took away a privilege now accorded students of smaller colleges of good standing, namely, that of entering the second year of medical college by showing an equivalent for the first year has been amended in the senate so as to retain the original privilege.

GENERAL.

Plague at Hawaii.—Two cases of plague were reported from Hilo, Hawaii, March 17.

More Plague at San Francisco.—After being free from any report of plague for many weeks, San Francisco has had one more case; this was in a Japanese woman, who died in the week ended March 21.

Examination for Army Medical Corps.—The examination will be held at the Army Medical Museum, beginning April 20, to fill forty vacancies in the junior grade of the medical department of the Army.

Florida Postpones Quarantine.—Every spring it has been a precaution of Florida to declare a quarantine against Cuba through fear of yellow fever. This year no quarantine will be enforced until cases of yellow fever occur in Cuba.

The Fourth Pan American Medical Congress, which was to have been held this year in Buenos Ayres, Argentine Republic, will not be held there on account of some unforeseen complications. It has practically been decided to hold the next meeting in Toronto, Canada, September next.

Vacancies in Navy Medical Department.—There are twenty-seven vacancies in the grade of assistant surgeon in the United States Navy. General Van Reipen and Surgeon-General Rixey are exerting every effort to fill the vacancies with young medical graduates of marked ability.

The Navy Medical School will hold its graduating exercises April 4. The following assistant surgeons will graduate at that time: Drs. R. A. Backman, E. M. Brown, R. E. Hoyt, M. W. Baker, J. L. Neilson, H. Shaw, F. M. Munson, H. F. Strine, J. P. Trainer, J. H. Holloway, R. H. Michels and B. F. Jennings.

Promotion of Naval Medical Officers.—The acting secretary of the Navy has decided officially that medical officers of the Navy must, under the law, be promoted to the next higher grade as line officers of like dates of precedence are promoted. In promoting medical officers they are to be advanced grade by grade with such line officers.

Whiting Caught.—We are glad to announce that F. Whiting, who was swindling physicians in Pennsylvania, New York and other eastern states, has been arrested, convicted and is now serving a six months' jail sentence. Credit is due to Drs. J. W. Morris, Jamestown, N. Y.; F. W. Frankhauser, Reading, Pa., and C. G. Hubbard, Hornellsville, N. Y., in securing Whiting's arrest and conviction. We can not allow this opportunity to pass without again urging our readers never to pay money to agents of any journal, or, in fact, to agents of anything, unless they show written and undoubted authority to make collections. Some two years ago a smooth young man swindled a large number of physicians, keeping up for several months by claiming to represent one journal for a while, then another and another, changing his name and field of operation with each change in journal.

CANADA.

Appointment.—The board of governors of McGill University have appointed Dr. James M. Elder of Montreal, assistant professor of surgery and lecturer in clinical surgery in the medical department of McGill.

Ghoul's Work at Queen's University, Kingston.—A freshman of Queen's University has recently been placed under arrest, having been caught in the act of attempting to rob a grave in a cemetery near that city.

Physicians to Speak in Montreal Churches.—The Protestant Ministerial Association of Montreal has decided that meetings should be held in all the city churches in May, at which addresses will be given by city physicians on "Tuberculosis and How Best to Prevent its Spread."

Canadian Physicians Turned Down in South Africa.—Three Canadian physicians, who went to South Africa with the Canadian Army medical corps, tried, at the conclusion of the war, to practice in the Transvaal. They were prohibited from doing so

because only English diplomas were legal there. They appealed to Lord Milner, but he refused to alter the regulation.

New Isolation Hospital Site Selected in Montreal.—The site of the new contagious diseases hospital, which is to be conducted under the management of the authorities of the Notre Dame Hospital, has been secured. The piece of land contains 52,000 feet and cost \$15,000. The board of management of the hospital is to receive \$15,000 annually from the city council for the purpose of maintaining the institution.

Honoring Dr. William Bayard, St. John, N. B.—A tribute of public regard and personal esteem was recently tendered to Dr. William Bayard of St. John, one of the oldest medical men in Canada. It took the shape of a handsomely engrossed resolution on parchment and was presented by the municipal council of St. John on the occasion of Dr. Bayard's resignation from the board of commissioners of the General Public Hospital, after a service of forty years.

Medical Inspection of Schools in Montreal.—In a paper recently read before the social science department of the Women's Club, Montreal, Dr. C. H. Church of that city strongly advocated the medical inspection of the schools of Montreal, as the conditions existing in some of them are to the last degree dangerous and unsanitary. Dr. Church had recently made an inspection of some of the city schools and the conditions he found prevailing, as embodied in his paper, seem almost to be incredible in a city the size of Montreal.

Deaths from Scarlet Fever in Ontario.—The returns for Ontario for February show a great number of deaths from scarlet fever. There were in all 104 deaths from this disease as compared with 38 during February, 1902. In January there were 94 deaths from scarlet fever, so that this year already there have been over 200 deaths from this disease. The deaths in Ontario in February from other diseases were: small-pox, 4; diphtheria, 27; measles, 7; whooping-cough, 7; typhoid, 19; tuberculosis, 160; total deaths, 2,083.

Growth of Montreal Tuberculosis League.—The Montreal League for the Prevention of Tuberculosis is rapidly growing in importance. It is now virtually associated with the main body, which holds its annual meeting at Ottawa, April 16. Dr. Roddick, as chairman of the executive, and Dr. Richer, secretary, will represent the league officially; and Senator Drummond, president of the league, Professor Adami and Dr. Lachapelle will also be present. Dr. Lachapelle will shortly present a strong resolution to the City Council, recommending that a by-law be passed against the obnoxious habit of spitting in public places.

Academy of Medicine and Physicians' Club for Toronto.—A movement is now on foot in Toronto looking to the amalgamation of the Toronto Clinical Society, Toronto Medical Society, Toronto Pathological Society and Ontario Medical Library Association into an Academy of Medicine and the establishment in connection therewith of a physicians' club. The movement is being endorsed by prominent practitioners in Toronto; and it is understood that already negotiations are under way for the purchase of a very handsome residence in the very heart of the city. The movement is a very desirable one, and it is to be hoped will meet with full consummation.

Ontario Medical Association.—The annual meeting of the Ontario Medical Association will be held in Toronto, June 16 to 18, under the Presidency of Dr. J. C. Mitchell of that city. This will be the first time in its history that a three days' meeting has been deemed advisable. The chairman of papers and business is Dr. W. P. Caven, Toronto, while Dr. Bruce Riordan, Toronto, will have charge of arrangements. This will ensure success both socially and scientifically. Dr. Thos. Cullen of Baltimore and Dr. Musser of Philadelphia are to be present and contribute papers. During the meeting a discussion will be held on arteriosclerosis. Dr. Harold C. Parsons, Bloor St., W. Toronto, is the general secretary.

FOREIGN.

Another Hospital Bed at Nice.—H. Humphrey Moore of California has established an American bed in the Victoria Hospital at Nice.

Veit Goes to Erlangen.—Professor Veit of Leyden has accepted a call to Erlangen to the chair of obstetrics and gynecology, in the place of the late Professor Gessner.

Legacy for Neurasthenics in Norway.—A legacy from the Meyer family of Bergen, Norway, leaves over \$75,000 to be applied to the assistance of neurasthenics. Part of the fund is for children.

Measles in London is more fatal than in previous years. It is not on the list of reportable disease in many sections of England. In view of its greater severity, English physicians are urging that it be made reportable.

Personally Conducted French Medical Trip to Foreign Universities.—The "Presse Médicale" of Paris has organized several of these tours and is now arranging one to visit the universities in Spain on the occasion of the International Medical Congress.

The Tenth Congress of Polish Physicians and Scientists, which was to meet in Lemberg, Austria, July, 1903, has been postponed until July, 1904, on account of the several international meetings which have either taken place recently or will occur during the current year.

Schaudinn Receives the Tiedemann Prize.—Dr. F. Schaudinn of Berlin has been awarded the annual Tiedemann prize by the Senkenburg Society at Frankfurt a. M. for his biologic studies and monograph on the Coccidia. The prize consists of a medal and \$125. The previous recipients have been Koch, Bütschli, Ehrlich, E. Fischer, Behring, and A. Kossel.

England Fears Sleeping Sickness.—The question is asked in London whether or not the so-called sleeping sickness of Africa can be transmitted to England by returning soldiers and, if so, how the danger should be handled? The disease has been known for years, but only as a rarity. Its change to an epidemic excites alarm, it is said, lest its nature be such as to threaten other than African or even other than tropical countries.

Novel Cure for Baldness.—A Weimar quack prescribed as a cure for baldness to smear the head with plum jam and spend three days and nights in the cellar. The farmer who followed his directions had a fine growth of mould by the third day, which was claimed to be the new growth of hair. But the course of treatment was interrupted by a severe cold, which kept the man in bed for three weeks. He complained to the authorities and the quack was fined \$1.25.

Memorial to Panas.—The friends of the late eminent Paris ophthalmologist are soliciting subscriptions for the purpose of erecting a portrait bust of Panas in the large hall of the ophthalmic clinic where he lectured for twenty-two years. A medal is also to be struck, and all who subscribe at least \$5 will receive a duplicate of the medal. Subscriptions can be sent direct to the bankers, MM. Rodocanachi et Cie, avenue Gabriel 42, Paris, or to the secretary, Dr. Monthus, rue Godot-de-Mauroi 41.

Quarantine Mecca Pilgrims.—Egypt is inspecting the caravans of pilgrims that are on their way to Mecca. Tor is a small port near Mount Sinai where each pilgrim has to stop and be investigated and have his belongings fumigated. Quarantine is established whenever there is need. The government pays the expenses of pilgrims who are detained. All boats are compelled by inspectors to carry pure water and to use wholesome food. The inspectors have the right to levy fines for infractions of rules and to detain vessels until such fines are paid. Since many pilgrims are sick or feeble and make the pilgrimage for that reason, hoping thereby to insure a right to paradise, the mortality and spread of disease is great. It is estimated that a third of those who start perish in the hardships of the desert.

Professional Secrecy Conflicting with Notification of Diseases.—The proposal to have notification of the venereal diseases made compulsory, which was discussed at the Preventive Conference, is energetically combatted by Boulengier in an appeal to the "Presse Méd. Belge." He complains that the physician is being deprived more and more of his personal initiative, and being degraded into a mere police official. People at large are being degraded into a mere police official. People at large are like great children. Much more can be accomplished by gentle moral suasion and example than by compulsion. What is needed is better training of medical students in the diagnosis and treatment of venereal diseases, special diplomas for specialists in this line and a "practical year" in venereal practice, with repeated post-graduate courses, which should include lectures on medical ethics. All public medical officials should be compelled to attend these courses. Unna's journal quotes his article approvingly.

German Society for Campaign Against Quackery.—A society has been recently organized for this purpose at Berlin with a large membership of physicians and laymen belonging to all classes of society. The aim of the organization is to enlighten the public in regard to the damage inflicted on health and purse by the practices of charlatans, and also to instruct the public in the proper care of the sick. Public lectures on both subjects

are to be held, and examples of the damage done by quacks will be cited. Still another line in which the society hopes to accomplish much is to send delegates to the open meetings held by charlatans to take part in the discussions. Popularly worded pamphlets warning the public are also to be distributed, and the publication of a weekly journal to further the cause is contemplated. Flagrant cases of injury from quack practices are to be reported to the officials and daily press. The dues of the society are merely 25 cents a year, and the list of members already includes many prominent names, both in and outside of the profession. Dr. Siefert of Tauentzienstrasse 3, Berlin, is the treasurer. The first public meeting was held March 8 in the city hall. The charlatans and their adherents were there in full force and by their demonstrations rendered the proceedings rather noisy.

Semi-Centennial of Munich Med. Wochenschrift.—At the jubilee banquet, March 7, Dr. Merkel reviewed the history of the "Wochenschrift," which is practically the history of medicine in Bavaria. The history of the medical press in general from its earliest inception was reviewed by Dr. Sudhoff, the most complete historical sketch of this subject yet produced. Both of the addresses are to be published in the "Wochenschrift." A bust of Dr. Dollinger, who has been managing the weekly, was unveiled, and a painting and set of silver were presented to the publisher and editor-in-chief. A reproduction of the first number of the "Wochenschrift" under its primitive title of "Aerztliches Intelligenz-Blatt," was distributed to the 160 guests. It was announced that the number of subscribers is now 9,000 and that the balance on hand for distribution to worthy objects was \$3,850. Of this sum \$1,230 was given to the National Physicians' Insurance Fund, \$500 to the Fund for Widows and Orphans of Bavarian Physicians, and other sums to similar organizations, with \$1,250 to the Pettenkofer Memorial Building Fund, \$25 to the Haller Monument Fund in Berne, and \$125 to the Ziemssen Memorial Fund. This makes a total of nearly \$12,000 distributed for such purposes since 1897. The "Wochenschrift" has been published by a syndicate of ten physicians, to which Helferich of Kiel and Spatz of Munich have recently been added.

Campaign Against Charlatans in Germany.—The last "Allg. Med. Ct.-Ztg." reports five new successfully prosecuted suits against quacks in Germany. The Hanover court condemned L. Fette to four years at hard labor and a fine of \$375 for his swindling methods, selling a box of salve that he bought in the drug stores for 10 cents for \$3 to \$5, and similar frauds. The Bayreuth court condemned Ahrbecker to two years of hard labor for selling abortifacients, and another charlatan, Jacob, to one month's imprisonment for receiving and treating by his methods a man with a complicated and soiled fracture of the leg, until the man was in the last stages of sepsis, when he summoned a physician. The Detmold court also condemned a magnetopath to six months in prison for treating an incarcerated hernia as "stomach cramps" until too late for suitable aid to be effective. Another magnetopath, Vigano, has also been sentenced to two years of prison at Magdeburg. It was found that he used to stand on a metal plate in the floor, connected with an electric apparatus, so that his patients could actually "feel the magnetic sparks emanating from him" as he touched them. He treated gallstones with an "oil cure," and presented the patients afterward with pebbles which he announced that they had voided. The testimony showed that the office boy ran out to pick up the pebbles as needed. He frequently received from \$15 to \$20 for a course of this treatment.

LONDON LETTER.

The Eyesight of School Children.

For some time the London School Board has had under consideration the question of the eyesight of the children and the means to be taken for its preservation when defective. As a result it has been decided to appoint 6 oculists. The general result of a preliminary test showed that while 80 per cent. of the children in the schools were found to have normal vision and 10 per cent. fair vision, the sight of 10 per cent. was bad, and of these 2 or 3 per cent. were very bad. Such defects of vision as existed were not due chiefly to fine work or bad lighting in the schools, but to social and nutritive conditions and to racial peculiarities, the proportion of those who had very bad sight being larger in the poorer schools than in those which were well-to-do, and larger in those schools which were predominantly Jewish than in those which were mainly Christians. The recommendation of the medical officer was that in future every child, when first admitted into a senior depart-

ment, should be examined by the class teacher, and a vision record made, such test being repeated annually.

The Anatomy of the Skull Stereoscopically Demonstrated by the X-Rays.

At the Royal Academy of Medicine in Ireland Dr. W. S. Houghton pointed out that the difficulty of interpreting a single skiagram arose from several causes. The x-ray picture was an example of uniplanar projection of multiplanar objects. This caused superposition of shadows. Then the fact that the x-rays formed a diverging cone caused magnification and obliquity distortions. These sources of inaccuracy in the "single picture" were eliminated by the beautiful stereoscopic method of Roentgen photography of Mr. Mackenzie Davidson. By this method a reproduction of the skull could be obtained, perfect in contour and perspective. Dr. Houghton showed by diagrams how all sources of inaccuracy were eliminated in the stereoscopic method and afterwards in the reflecting stereoscope showed prints of the base of the skull and lateral views in which general points were well demonstrated, including the relations of the groove for the lateral sinus to the mastoid air cells, the mastoid emissary vein, the internal auditory meatus, the external auditory meatus, the cochlea, the semi-circular canals, the canal for the internal carotid artery, and the foramina in the base of the skull.

The Physical Condition of School Children.

The physical deterioration of the town population, which ever increases at the expense of the country, has given rise to serious forebodings by those interested in the national welfare. A royal commission appointed to inquire into the physical training of children in Scotland has just presented its report. The principle that education should consist in training the body, as well as the mind, though acted on in the schools of the upper classes and in the universities, is systematically ignored in the state-provided schools for the mass of the population. The commissioners ask for a more comprehensive conception of school life than prevails, and provision of larger playgrounds and exercise halls. They consider that too many subjects are attempted to be taught and that the children are too closely confined to their books. Systematic school exercises are recommended. At present in the schools in Scotland only from half an hour to two or three a week are devoted to physical training. The commissioners have collected some rather alarming statistics concerning the prevalence of diseases of the eyes, ears, nose and throat.

Paraffin Injections in Prolapse of the Bowel and Uterus.

At the Clinical Society Mr. Stephen Paget read a paper on this novel method of treatment. He described the case of a man aged 65 who in 1897 underwent excision of the rectum for cancer. Ever since he suffered prolapse of the bowel and was compelled to wear a rectal plug. On January 15 paraffin was injected into the prolapse bowel, forming two round, hard nodules under the mucous membrane, so that the orifice was closed by a sort of valve. The prolapse was cured and the use of the plug discontinued. In another case a woman aged 70 had suffered from prolapse of the bowel for 22 years, and had undergone 5 operations. Prolapse occurred on the slightest effort, and if the motions were very loose she had no control over them. On February 15 paraffin was injected under the mucous membrane and formed a hard collar, more than half of the bowel. This produced great improvement, but still slight prolapse at times. March 1 a second injection was made and the anal orifice was narrowed by Mayo-Robson's operation. The prolapse was permanently cured. In a third case a woman aged 63 had for 28 years suffered from prolapse of the uterus, in spite of an operation performed 14 years before. The vagina was so dilated that it would not contain a pessary, and there was complete prolapse of both walls and of the cervix, which was greatly enlarged. Paraffin was injected in various directions under the mucous membrane of the vagina, mostly in the posterior wall and under the mucous membrane of the cervix. Since then there had been no prolapse, not even when she strained. The cervix was high, and both vaginal walls were indurated, and the recto-vaginal septum was half an inch thick.

As to Prognosis.—Never be too sure. Be not over-positive. A wrong prognosis is always bad—for the doctor. One that is conservative and guarded is always safe for the reason that it permits one to turn either way in modification of the former contingent opinion, and thus always be right.—"Med. Council"

Correspondence.

Pompeii and the Alleged Lost Art of Gynecology.

BARRY, ILL., March 21, 1903.

To the Editor:—Enclosed please find an article which appeared in "Current Literature" of December, 1900, based as to the knowledge alleged to have been in existence in the time when Pompeii was in existence, that is, before 770 A. D., on an article in the "Scientific American." I saw, some weeks ago, in the "Sunday Globe-Democrat," the same statements, only stronger. I mislaid the copy which I intended to send you at that time, but, fortunately, while looking over some old numbers of the "Current Literature" I find the enclosed.

[The enclosure credits the Pompeians with having a great number of surgical instruments the exact counterpart of those used to-day and further declares that gynecology in its present degree of perfection was existent 2,000 years ago.]

Now, I do not believe a word of the statement for two reasons: If such were a fact, it would be very strange if no hint of the kind is to be found in the works of the Elder Pliny, who perished in the eruption of Vesuvius which destroyed Pompeii, he being in command of the Roman fleet stationed in the Bay of Naples. His works are well known to contain a hodge podge of almost everything known at that time which by any possibility could be considered at that time as belonging to natural history and a great deal that has no sort of relation thereto. But if it should so happen that he does not deal in medical and surgical knowledge, my second reason is much stronger, for, as you know, we have what the Encyclopedia Britannica, vol. 23, p. 675, calls the "Authoritative Treatise of Paul of Argina, 650 A. D.," which contains no mention of any such wonderful instruments. I suppose that the translation by Travis Adams, 3 vols., London, 1847, is easily to be found in some of the Chicago medical libraries. I think if I am right that THE JOURNAL ought to have an article on the subject. I should think that Dr. Senn might well occupy some of his learned leisure, if he has any at this time of year, in writing such an article; it ought to be illustrated by pictures of those wonderful "anticipations" by the ancients of the proudest achievements of modern surgery.

E. W. BAKER.

ANSWER.—There is a popular superstition that there are lost arts; that in times past the earlier civilizations excelled the efforts of our times. Wendell Phillips used to have a favorite lecture which he delivered through the country on these lost arts, which may have been a partial cause of the prevalent notions on the subject. The fact is, however, that there is no lost art. Whatever was lost during the middle ages has been more than recovered. Dr. Senn's paper on Pompeian surgery and surgical instruments, "Medical News," Dec. 28, 1895, which seems to be unknown to our correspondent, while it illustrates surgical instruments obtained at Pompeii, gives no evidence of anything to compare with the imaginations of the writer of the article in "Current Literature" referred to by Dr. Baker. The instruments Dr. Senn illustrates are crude and, while they seem to suggest in some respects modern appliances, etc., they are very far from being what a surgeon of the present day would care to be restricted to in his surgery, and a very poor mechanic at the present time could improve on them. As the late Prof. Joseph Henry used to say, there is no lost art except that of reckless and unlimited waste of human life, to which many of the great works of the ancients, as now shown in the ruins of Baalbec and in the Pyramids, can be attributed. Human life and time counted for little with the despots of the Orient in the early history of the world.

Osteopaths and Legislation.

NEW YORK, March 28, 1903.

To the Editor:—It seems incredible that the osteopaths should have been enabled to gain favorable legislation in several states, and it makes one feel that the physicians have not properly presented the matter in discussions before legislative

committees. On several occasions when I have been present it was painfully evident that regular physicians who were being depended on by members of the committee had not read any of the books or other literature of the osteopaths, and that they were not prepared to take a dignified position in discussions. It seems to me that the osteopaths could always be defeated without the necessity for any very elaborate argument if some physician would take the trouble to have properly-prepared specimens of spinal columns to show to members of the committee. I have chosen a longitudinal section of a child three or four years of age, preserved in formalin solution, and the fresh rack of a lamb. The osteopaths are then asked to state that they cure diseases by "setting or moving" vertebrae and ribs and other bones, and the fraudulent nature of their pretension is so apparent to legislators who have the specimens before them, that even as laymen they are at once convinced of the deception that is practiced on patients, and one need not turn any fine points in rhetoric, or polish his diction in preparation for the discussion. There is one point in osteopathic bills that is misleading to legislators. I quote from this year's New Jersey Senate Bill No. 218, Page 4, Section 9: "The certificate or license granted by said board shall not in any way be construed to authorize the holder thereof to prescribe or use drugs in his or her practice, nor to perform operative surgery." This sounds very innocent, but it means that osteopaths will take charge of all sorts of cases that really should have the benefit of drugs or of operative surgery.

58 West 56th Street.

ROBERT T. MORRIS.

Priority in Technic of Tubercle Bacilli Recognition.

CHICAGO, March 30, 1903.

To the Editor:—In your issue of March 28, I notice an abstract of a paper which appeared in the "Deutsche Zeitschrift für Chirurgie" by Forssell on an "Improved Method of Determining the Presence of Tubercle Bacilli in the Urine."

I would direct your attention to the fact that the process described is identical in every essential feature with the method introduced by Dr. J. E. Skinner and myself a number of years ago and described by us in an article published in THE JOURNAL of the American Medical Association, Jan. 29, 1898. Our process, as described in this paper, consists in separating the sediment from a considerable volume of urine by gravity (preferably in a tapering glass vessel like a percolator), drawing off the deposit, and reducing it to a very small bulk by centrifuging. Forssell's method, as will be seen by consulting the abstract referred to, is practically identical with this.

It is true that our method was especially devised and introduced for the purpose of detecting casts in the urine, and this fact is indicated in the title of our article. But in two or three places we refer to its use in examining for any sediment, and in next to the last paragraph we speak of its great advantage in testing urine for micro-organisms, especially when they are sparingly present.

I may add that I have used the method now for six or seven years and find it fully as advantageous as claimed in our article for the detection of casts and all other sediments when present in small proportion, and I am glad to have the added testimony of Forssell in regard to its value in examining for tubercle bacilli

WALTER S. HAINES.

A Vigorous Protest.

CHICAGO, March 30, 1903.

To the Editor:—I wish to protest as vigorously and publicly as may be against the sentiment, the lack of good taste, the apparent deplorable motive, and the contents of the editorial with the Latinized caption, on page S55 of the last issue of THE JOURNAL. This poorly conceived, libelous and anonymous assault on the scientific labors of Dr. Jacques Loeb, and on his personal character, does not add dignity to THE JOURNAL, nor is it calculated to cultivate respect for the Association among the many students of this pioneer in physiology. I have read it with shame and disgust, and I call for a public

apology from the censorial editor of his flagrant neglect of duty.

BAYARD HOLMES, M.D.

ANSWER—A careful reading of our editorial will, we think, convince one that our critic is over-sensitive in his interest in the eminent physiologist referred to. It was not intended to reflect in any way on his personal character or scientific work, but to criticize the unfortunate—to say the least—sensationalism which has attended most of the announcements of his discoveries in the public press, and to notice the latest statements credited to him which seem to be extreme and scientifically presumptuous. We do not think an apology is called for.

The Sub-Section on Tropical Medicine.

NEW YORK, March 28, 1903

To the Editor:—Allow me the observation that tropical medicine is of such vast importance that a sub-section as proposed by you and which you editorially endorse would not cover the ground. Why should the Section on Hygiene and Sanitary Science have anything to do with it? That section has as much interest in every other section as it would have in tropical medicine.

ALBERT S. ASHMEAD.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

WHY IS THE A. C. E. MIXTURE NOT USED MORE?

MAHONY CITY, PA., March 23, 1903.

To the Editor:—Dr. Willy Meyer (in THE JOURNAL of February 28 and March 7) quotes our English colleagues as having used the A. C. E. mixture in 15,000 cases without one death. If this is true kindly advise me why the A. C. E. mixture is not used more in this country.

GEORGE W. REESE.

ANS.—The A. C. E. mixture has never achieved the popularity in this country that it has in England. We believe it is used there more than is either ether or chloroform. Deaths are, however, reported from its use.

MADRID CONGRESS RAILROAD CERTIFICATES.

NEW YORK, March 25, 1903.

To the Editor:—The following information has just been received by cable from the Secretary-General of the Fourteenth International Medical Congress: The French railroads have made their rate reductions for the members of the International Medical Congress depend on a special certificate, and on the use of the same route for going and returning. Any member of the congress to whom this is of interest should therefore write immediately to the secretary-general at Madrid, stating at what port he expects to land and what route he will take. The secretary-general will send to him at the port named under the address "poste restante" the necessary certificate.

JOHN H. HUDDLESTON,

Secretary American Committee.

MATERNAL IMPRESSIONS.

ATCHISON, KAN., March 26, 1903.

To the Editor:—In THE JOURNAL of March 21, Dr. A. G. Belsheim reports a case of so-called maternal impression. The Doctor evidently wishes to convey the inference that the burn was responsible for the birthmark.

The maternal-impression belief is as old as the race and apparently as ineradicable as the unlucky Friday superstition. Occasionally some one meets misfortune on Friday; therefore Friday is responsible. Very rarely a powerful shock or accident occurring during pregnancy is followed by the appearance of a mark on the child at birth; such a coincidence is promptly regarded as a case of cause and effect. When an expected marking doesn't appear—which is the case at very many births—the maternal-impression theory receives no discredit thereby, but possibly some pious reflection on the efficacy of prayer may be elicited instead.

Surely at this late day the maternal-impression superstition should be relegated to the medical lumber-room. When it is remembered that there is practically no more anatomic or physiologic connection between the nervous systems of the mother and her unborn child than there is between the nervous systems of the settling hen and her unhatched chicks, how can the belief in the transmis-

sion of nervous influences so powerful and so selective as to produce specific localized structural lesions, be entertained. Such an unscientific theory may be good christian science or good sewing-circle-science, but surely it is too absurd a notion to merit the credence of intelligent medical men.

The grief of the mother of an imperfect child is usually great enough without adding to her distress by laying the blame for the unfortunate occurrence on her. On the contrary, physicians had far better try to relieve the sacred period of motherhood of the cruel, absurd belief, that the mother can, by any possible means, "mark" her unborn child.

E. T. SHELLEY.

Marriages.

AUG. D. FERGUSON, M.D., to Miss Elma Gaulling, both of Frost, Texas, February 25.

CLINTON B. HERRICK, M.D., Troy, N. Y., to Miss Mary M. Slavin of Cohoes, N. Y., at Jersey City, N. J., March 19.

ABBIE M. WINEGAR, M.D., Battle Creek, Mich., to Mr. W. Ray Simpson of Helena, Cal., at San Francisco, March 8.

LIEUTENANT HENRY S. KIERSTED, assistant surgeon, U. S. Army, to Miss Edith McBean of San Francisco, March 28.

Deaths.

John Wallace Collins, M.D. University of Louisiana, New Orleans, 1860, throughout the Civil War a surgeon in the Confederate service, professor of gynecology and abdominal surgery Denver Medical College from 1886 to 1895 and emeritus professor since 1895, president of the Colorado State Medical Society 1888-1889, physician and chief surgeon at the Colorado State Penitentiary, Canon City, died at the home of his brother, near Pueblo, March 20, aged 67.

Jonathan L. Cilley, M.D. Miami Medical College, Cincinnati, 1866, for 19 years demonstrator of anatomy in the Ohio Medical College, considered one of the greatest anatomy teachers in America; a surgeon during the Civil War in both Army and Navy, died March 18, in the Post-Graduate Hospital, New York City, from complications following an operation for Bright's disease, from which he had suffered for eighteen months, aged 65.

Cyrus E. Baker, M.D. College of Physicians and Surgeons, New York, 1862, who served as acting assistant surgeon in the volunteer forces until 1863, when he was invalided on account of sunstroke and malaria, and who thereafter practiced in Claremont, N. H., died at his home in that place, March 23, after many years of ill-health, aged 67.

J. Augustus Carncross, M.D. Jefferson Medical College, Philadelphia, 1876, assistant physician at the Friends' Hospital for the Insane, Frankford, Pa., a member of the Philadelphia County Medical Society, and a well-known authority on nervous and mental disease, died at the hospital, March 19, after a short illness from heart disease, aged 58.

Frederic L. Marcotte, M.D. Chicago Medical College, 1877, of Concordia, Kan., formerly surgeon of Missouri Pacific and Burlington and Missouri River railways; formerly president Republic County Medical Society, died at Leavenworth, Kan., where he had been taken for treatment, March 18.

William Eastman, M.D. Rush Medical College, Chicago, 1871, a member of the American Medical Association, and one of the most prominent practitioners of southwest Wisconsin, died at his rooms in Mineral Point, Wis., March 15, from paralysis, after an illness of a few hours, aged 70.

Charles B. Ferrell, M.D. Bellevue Hospital Medical College, New York, 1873, member of the Franklin County Medical Society, and some-time physician at the state penitentiary, died at his home in Columbus, March 23, from meningitis, after an illness of two weeks, aged 63.

Charles Howell, M.D. University of Michigan, Ann Arbor, 1861, died at his home in Ann Arbor, Mich., March 20, after a long illness, from paralysis, aged 73. He served throughout the Civil War as a surgeon on the Union side.

Herbert H. McAuley, M.D. Kentucky School of Medicine, 1889, of Chicago, organizer of the Chicago Hospital Corps in the Boer war, died at St. Joseph's Hospital, Joliet, after an operation for appendicitis, March 24, aged 32.

William A. Howell, M.D. University of the Victoria College, Cobourg, Ont., 1860, died at his home in Jarvis, Ont., March 23,

from paralysis following spinal disease due to a fall from his horse in 1874, aged 66.

Spencer Morris, M.D. Cincinnati, 1846, for many years a popular quiz-class teacher of Philadelphia, died at his home in Mount Morris, Pa., after an illness of four years, from paralysis, aged 82.

Charles W. Dulin, M.D. College of Physicians and Surgeons, Chicago, 1893, of Kansas City, Mo., died at his home in Nevada, Mo., March 23, from typhoid fever, after an illness of two months, aged 30.

Norton Strong, M.D. Harvard Medical School, Boston, major and surgeon U. S. Army (retired), who was stricken with paralysis five years ago, died at his home in Baltimore, March 23, aged 51.

James Shackelford, M.D. Jefferson Medical College, Philadelphia, 1861, formerly a state senator, died at his residence in Maysville, Ky., March 25, after an invalidism of several years.

Hans M. Martin, M.D. Rush Medical College, Chicago, 1897, of Newark, Ill., died at St. Charles' Hospital, Aurora, Ill., March 17, from dropsy, after an illness of several weeks, aged 34.

Thomas T. Oliver, M.D. Medical Department of Victoria College, Toronto, 1853, died at his residence in Chicago, March 26, from pneumonia, after an illness of one month, aged 73.

H. Turner Bass, M.D. University of Pennsylvania, Philadelphia, 1874, was shot by Dr. Julian M. Baker, March 16, and died on the following day at his home in Tarboro, N. C.

Henry Allan Noyes, M.D. Hahnemann Medical College, Chicago, 1891, of Pittsfield, Mass., died at Asheville, N. C., March 24, from tuberculosis, after an illness of a year.

James C. Burlington, M.D. Indiana Eclectic Medical College, Indianapolis, 1886, died at his home in Attica, Ind., from pneumonia, March 15, after an illness of ten days, aged 65.

Ross C. Kirkpatrick, M.D. Starling Medical College, Columbus, 1870, died at his office in Los Angeles, Cal., March 13, from angina pectoris, after a short illness, aged 60.

Roscoe M. Parsons, M.D. Chicago Homeopathic College, 1882, died at his office in Traer, Iowa, March 21, from an overdose of chloroform, taken to induce sleep, aged 55.

John M. Douds, M.D. Homeopathic Hospital College, Cleveland, 1881, died at his home in Beaver Falls, Pa., March 17, after an illness of several months, aged 60.

Frank Merritt, M.D. Detroit Medical College, 1877, twice mayor of Charlotte, Mich., died at his home in that place March 16, after an illness of three weeks.

John H. Fisher, M.D. Eclectic Medical Institute, Cincinnati, 1852, died at his home in Augusta, Mich., March 23, from pneumonia, after a short illness, aged 69.

Benjamin Miller Van Sickle, M.D. Bellevue Hospital Medical College, of New York, died at the home of his mother in Newark, N. J., March 15, aged 46.

Harvey L. James, M.D. University of Buffalo, N. Y., 1881, died at his home in Shelby, N. Y., March 14, from consumption, after a long illness, aged 46.

John Steifel, M.D. Homeopathic Medical College of Missouri, St. Louis, 1878, died at the home of his daughter in Bucyrus, Ohio, March 14, aged 78.

Charles Wesley Roberts, M.D. Hahnemann Medical College, Philadelphia, 1889, died in Scranton, March 20, from heart disease, aged 55.

John Miller, M.D. Heidelberg and Berlin, Germany, died at his home in Buffalo, N. Y., March 18, from gastric ulcer, aged 79.

Walter H. Vincent, M.D. New York University, 1884, died at his home in Orwell, Vt., March 6, after an illness of one week.

Robert Safford Newton, M.D. New York University, 1876, an alienist of New York City, died at his home, March 25, aged 45.

Charles F. Parker, M.D. University of Vermont, Burlington, 1883, died at his home in Boston, March 24, after a long illness.

J. P. Shacklett, M.D. Louisville Medical College, 1880, died at his home in Ekron, Ky., March 22, after a prolonged illness.

Albert R. Erskine, M.D. University of Pennsylvania, Philadelphia, 1851, died at his home in Huntsville, Ala., March 24.

Augustus C. E. Hertel, M.D. Cooper Medical College, San Francisco, 1859, died at his home in San Jose, Cal., March 14.

J. C. Archer, M.D. Ensworth Medical College, St. Joseph, Mo., 1898, died recently at his home in South St. Joseph, Mo.

Frederick Alexander Hesler, M.D., surgeon-lieutenant U. S. Navy, died at sea, March 11, from heart disease.

Warren O. Blaisdell, M.D. 1878, died at his home in Macomb, Ill., from rheumatism of the heart, March 18.

Julius C. Fox, M.D., 1878, died at his home in Keyesport, Ill., March 12, aged 65.

Book Notice.

BIOLOGICAL LABORATORY METHODS. By P. H. Mell, Ph.D., Director of Alabama Experiment Station. Cloth. Pp. 321. Price, \$1.00. New York: The Macmillan Co. 1902.

This little book, while not strictly medical, is one that can be of use to the physician who utilizes the microscope. There are many uses for the microscope, moreover, that are not strictly medical which would be a profitable recreation at least for the physician who has time on his hands. The special advantage of the book is the fulness of its illustrations and descriptions of the biologic methods. It may be a little deficient in purely medical details such as special tissue stains, etc., but on the whole it is very complete.

Miscellany.

Skill in the combination of drugs, not only to increase the physiologic action of each, but to make the medicine pleasant of administration, is greatly to be desired and has made the reputation of many a man. But to attempt to prescribe for every symptom of a disease by throwing unskillfully together eight or ten drugs, as is too often done, is unscientific, dangerous and is that abomination of abominations—polypharmacy.—H. R. Purdy.

For the Removal of Tattooing.—Those who have been tattooed and who regret it may succeed in ridding themselves of these marks by the following process: Pour on the tattooed portion a concentrated solution of tannin, then by means of a needle analogous to that of the tattooer, prick the surface and then rub hard with a nitrate of silver pencil. There is formed a slough which falls at the end of fourteen or eighteen days, and the operation leaves only a slight scar, which at the end of two months is invisible.—“Cosmos.”

No Patent Medicines at St. Louis Fair.—J. A. Ockerson, chief of the liberal arts department of the St. Louis exposition, says: “Articles that are in any way dangerous or offensive; also patent medicines, nostrums and empirical preparations whose ingredients are concealed, will not be admitted to the exposition. The director of exhibits, with the approval of the president, has the authority to order the removal of any article he may consider dangerous, detrimental to or incompatible with the object or decorum of the exposition or the comfort and safety of the public.”—“Practical Druggist.”

Overfeeding and Cancer.—Oldfield urges in the “British Medical Journal” that the overfeeding of animals and the retention in their tissues of the decomposition products make the eating of such animals as food productive of an unstable cell equilibrium which foreruns the cancer incidence, and that the same thing applies to vegetables, though in a lesser degree. During his late tour through India he found cancer practically absent from all areas where vegetation was sparse and where the animals used for food had lived a hardy existence, but in those regions marked by ranker vegetation and where the animals were more highly foddered it was more prevalent.

The Cocain Evil.—The law of Illinois specifically prohibits the sale of any article, open or proprietary, containing cocain, except on the prescription of a physician. . . . The law is certainly one of the most righteous ever enacted by a legislative body. The curse of the cocain habit to-day afflicts thousands of homes, from the palaces of the rich to the hovels of the poor. It is doubtful if the evils of alcoholism are more extensive or more destructive in their effects on society than the insidious and deadly ravages of cocain. . . . What the statute prohibits in Illinois the conscience of every druggist in America should as resolutely prohibit, and any thought of

profit arising from complicity in the traffic should be as foreign as complicity in any other dastardly crime against his patrons or society in general.—“Western Druggist.”

Adulteration.—Nearly every drug in the Pharmacopeia is adulterated, and, as such, fails to give the desired action. So great has this evil become that we often confess to one another that we prescribe less and less, and confine ourselves to a few fundamental drugs, remedies which we think we obtain from reliable sources and give in cases of necessity, leaving our patients to take their favorite compounds of tonics and appetizers on their own responsibility. . . . If drugs could be treated sacredly, exactly and conscientiously by the druggists, and by the public, as they are in hospitals, in experimental laboratories, and as physicians themselves treat them, the practice of medicine would be a much more satisfactory profession than it is at present.—“Medical News.”

Queensland More Progressive than the United States as to the Adulteration of Foods.—While we wait in vain for our political bosses to do something for the health of the people, Queensland has perfected a system to protect her citizens from the scoundrels who seek to cheat them by the most vicious criminality in the manufacture of impure and poisonous foods. Strict laws are enforced in Queensland as to the substances that may and may not be used as ingredients, coloring matters, preservatives, etc., of beer, alcoholic liquors, mineral waters, fruit essences, foods, milk, tea, vinegar, butter, cream of tartar, etc. There are detailed laws also as to the carrying on of the businesses pertaining to the manufacture and sale of all such things, and a fine not exceeding \$250 is provided for infringement of any parts of the law. Were it not for the hope that the careless and corrupt and ignorant among our people and their lawmakers will at last renounce their ways and become interested in the health and welfare of the nation, the outlook for republicanism in government would not be hopeful.—“American Medicine”

Diarrheic Form of Hyperchlorhydria.—Hyperchlorhydria is usually accompanied by constipation, but there is a variety with diarrhea, either paroxysmal or constant. Both the diarrhea and the constipation are evidently defensive reactions on the part of the intestine to the hyperacid chyme. Surmont and Lerat have been making a special study of the diarrheic form and proclaim that it is undoubtedly due to imperfect closure of the pyloric orifice, and this insufficiency is the result in turn of nervous influences, a muscular asthenia. These nervous influences are demonstrated also in the intense depression that follows the attacks, the violent abdominal pains occasionally experienced, and the secondary influence of emotions or chilling, noticed in all cases of diarrhea. Diagnosis is almost impossible without chemical investigation of the stomach contents, but differentiation is important as prognosis and treatment directly depend on it. The paroxysms of diarrhea usually occur in the middle of the night; the pain is located in the epigastrium and around the umbilicus. It subsides abruptly as the desire is felt. The subject experiences afterward great nervous depression and a nausea and distress recalling the sensations of seasickness. This condition does not subside until toward morning, and if the subject drops to sleep he awakes from time to time with a start. One of Surmont's patients was an army officer and his depression after a paroxysm was so extreme that he feared he would be compelled to leave the service, as he realized the impossibility of responding to any professional calls at such times. The condition resembles the nervous depression liable to follow the paroxysmal sialorrhea of certain tabetics or certain profuse sweats. The diarrhea may be the only apparent symptom of the hyperchlorhydria. One of the patients with the permanent form of diarrhea from this cause was a child of 11. This diarrhea always occurs very early in the morning or after breakfast and lunch. There is usually considerable pain and some nervous depression follows. Treatment is that of hyperchlorhydria in general with hydrochloric or phosphoric lemonade in cases rebellious to the usual measures.—“Echo Méd. du Nord,” vii, 2.

Privileged Communications and the Physician.—At the last meeting of the New York Society of Medical Jurisprudence

Alfred L. M. Bullowa, a lawyer, read a paper entitled "The Medical Secret, or the Privilege of Physicians in Court Proceedings." He said that the present code gave every practicing physician the right to decline to answer any question or to give any testimony which would reveal any secret, condition or fact that had come to him by reason of his professional duties. This provision of law in this country is of the first importance in life insurance cases, and next in inheritance cases, where insanity on the part of the testator might be alleged. The physician is not expected to divulge professional secrets, even if he knew that his patient was deliberately perpetrating a fraud. Physicians complain that the law bears hard on them when they desire to sue for professional services, but lawyers are similarly prevented from detailing the nature of their services. In supplementary proceedings, or in bankruptcy actions, no call can be legally made on physicians for their account books if the latter contain information regarding their patients of a privileged character.

State Boards of Registration.

Texas Examination.—The next meeting of the Board of Medical Examiners (Regular) for the State of Texas will be held in Austin, April 20 to 23. For further information or application blanks, address Dr. M. M. Smith, secretary, Austin, Texas.

Indiana Examination.—A special meeting of the Indiana State Board of Medical Registration and Examination is called for April 23, when this year's graduates of the medical colleges of that state will be licensed to practice. They will receive certificates without examination if they matriculated before Jan. 1, 1901, but after Jan. 1, 1905, all graduates will be obliged to take examinations.

New Arizona Law.—The new medical practice act of Arizona, which has just passed the legislature, provides for a board of medical examiners, three regular, one homeopathic and one eclectic, appointed by the governor, meeting quarterly at Phoenix, and at such other times as it may appoint. The law provides for the issuance of license to those who are residents of Arizona, are of the age of 21 and are of good moral character, and who in addition: 1, present diploma and pass examination; or 2, present diploma and show certificate of license under the laws of 1901 or 1897; or 3, have practiced for five successive years previous to the passage of the act and pass an examination. The law provides how application shall be made, sworn to, and how certification shall be made as to character and length of practice. The fee for license is \$2, and for examination \$10. Those who have complied with previous laws are given until June, 1903, to comply with this law. Violation is punishable by a fine of \$100 to \$1,000 or imprisonment for three months to one year, or both fine and imprisonment. Other provisions of the law appear in the following portions quoted:

Sec. 5. The examination provided for in the preceding section shall be made by said board as soon after the application shall have been presented as it may be conveniently done and after notice to the applicant of the time and place thereof. The examination shall be conducted under such reasonable rules and regulations as the board may prescribe therefor, and with the design and purpose of ascertaining the fitness of the applicant for the practice of medicine in this territory. If the applicant request it, he or she shall have the privilege of being examined in the branches of the science and practice of medicine other than physiology, anatomy, pathology, chemistry, practice, surgery, obstetrics and gynecology, by the member or members of the board of the particular school of medicine specified in his or her diploma, and if the examination in such other branches be satisfactory to the member or members conducting said examination, it shall be approved by the board and to the extent thereof be deemed to be to the board's satisfaction.

Section 7. Upon proper proof to the Board of Medical Examiners of Arizona that the holder of any license issued under the provisions of this act has been guilty, since the issuance thereof, of any grossly immoral or unprofessional conduct, or of other conduct rendering him or her unfit to practice medicine in this territory, or has been convicted of any felony, said board shall, after due notice to such holder and full opportunity to him or her to defend against or refute such charges, revoke and cancel such license, and it shall thereafter be unlawful for such person to practice medicine in this territory until he or she shall again be licensed thereto under the provisions of this act.

Sec. 10. Any person shall be regarded as practicing medicine within the meaning of this act, who shall, within this territory, (a) by advertisement, or by any notice, sign or other indication, or by any statement, printed, written, or oral, in public or in private, made, done or procured by himself or herself, or any other, at his or her request for him or her, claim, announce, make known or pretend his or her ability and willingness to diagnose or prognosticate any human diseases, ills, deformities, defects, wounds or injuries; (b) or who shall so advertise or make known or claim his or her ability and willingness to prescribe or administer any drug,

medicine, treatment, method or practice, or to perform any operation, or manipulation, or apply any apparatus or appliance for cure, amelioration, correction, reduction or modification of any human disease, ill, deformity, defect, wound or injury, for hire, fee, compensation or reward, promised, offered, expected, received or accepted, directly or indirectly; (c) or who shall within this territory diagnose or prognosticate any human diseases, ills, deformities, defects, wounds or injuries, for hire, fee, reward, or compensation, promised, offered, expected, received or accepted directly or indirectly; (d) or who shall within this territory prescribe or administer any drug, medicine, treatment, method or practice, or perform any operation or manipulation, or apply any apparatus or appliance for the cure, alleviation, amelioration, correction or modification of any human disease, ill, deformity, defect, wound or injury, for hire, fee, compensation, or reward, promised, offered, expected, received or accepted, directly or indirectly; (e) or who shall act as the agent of any person, firm or corporation, in the practice of medicine as hereinbefore set forth; (f) except it be in the advertisement or practice of dentistry, midwifery, or pharmacy, or in the usual business of opticians, or of vendors of dental or surgical instruments, apparatus or appliances.

Sec. 11. The provisions of this act shall not be construed to modify, or in any wise affect the provisions of the laws of this territory relating to the practice of dentistry.

Association News.

NEW ORLEANS HOTELS.

ST. CHARLES HOTEL FILLED—ANNOUNCEMENT OF HOTEL COMMITTEE.

Dr. E. D. Martin, New Orleans, Chairman of the Committee on Hotels, writes that all accommodations in the St. Charles Hotel, the headquarters, are taken for the time of the meeting. He requests that physicians who write for reservation of rooms specify what they desire, as to the time of their arrival and departure, price, baths, single or double rooms, etc. THE JOURNAL next week is the special New Orleans Number, containing an elaborate write-up of New Orleans, with many illustrations thereof. Full particulars of hotels, railroads, excursions, programs, etc., will be given.

Medical Organization.

Humboldt County (Cal.) Medical Society.

Members of the medical profession met at Eureka, March 7, and organized a county medical society, which asked affiliation with the state society.

Athens County (Ohio) Medical Society.

This society was organized at Athens, March 3, with the following officers: Dr. Charles S. McDougall, Athens, president; Dr. Edmund F. Danford, Glouster, vice-president; Dr. Ulysses P. White, Athens, secretary, and Dr. David H. Biddle, Athens, treasurer.

Rowan County (Ky.) Medical Society.

The physicians of Rowan County met at Morehead, March 21, and organized a county society, after listening to an address by Dr. Joseph E. Wells, Cynthiana, counselor for that district. The constitution and by-laws prepared by the American Medical Association were adopted without change and the following officers elected: President, Dr. F. M. Carter, Farmers; secretary, Dr. Jeremiah Wilson, Morehead.

Bath County (Ky.) Medical Society.

The physicians of Bath County met at Owingsville, March 20, and organized a county society, and adopted the constitution and by-laws promulgated by the American Medical Association without change, after an address on the subject of organization by Dr. Joseph E. Wells, Cynthiana, counselor of the district. The following officers were elected: President, Dr. Henry H. Lewis, Salt Lick; secretary, Dr. J. W. Rutherford, Sharpsburg.

Fleming County (Ky.) Medical Society.

The physicians of Fleming County held a meeting at Flemingsburg, March 18, and organized a county society, and adopted the constitution and by-laws proposed by the American Medical Association, after listening to a talk on organization from Dr. Joseph E. Wells, Cynthiana, counselor of the district. Dr. Alvin M. Wallingford, Mt. Carmel, was elected president; Dr. Charles R. Garr, Flemingsburg, vice-president, and Dr. Addison S. Robertson, Flemingsburg, secretary and treasurer.

Nelson County (Ky.) Medical Society.

The physicians of Nelson County, met at Bardstown, March 21, and organized a county society, adopting the constitution and by-laws prepared by the American Medical Association without change. The following officers were elected: President, Dr. J. Edward Smith, Bardstown; vice-president, Dr. William J. Heiser, New Haven; secretary, Dr. Hugh D. Rodman; treasurer, Dr. H. E. McKay, both of Bardstown, and delegate to the state association, Dr. Aloysius G. Blincoe, Bardstown.

Nichols County (Ky.) Medical Society.

The physicians of Nicholas County met at Carlisle, March 17, and organized a county society, after listening to an address by Dr. Joseph E. Wells, Cynthiana, counselor of the district, and adopted the county constitution and by-laws of the American Medical Association without change. The following officers were elected: President, Dr. G. W. Grimes, Carlisle; vice-president, Dr. H. Yancey, Carlisle; secretary, Dr. George B. Spencer, Carlisle; treasurer, Dr. Samuel R. Fisher, Headquarters; delegate to the state association, Dr. B. F. Reynolds, Carlisle; censors, Drs. N. H. McNew, Harry Munger and Malcolm Dills.

Societies.**COMING MEETINGS.**

AMERICAN MEDICAL ASSOCIATION, FIFTY-FOURTH ANNUAL MEETING, NEW ORLEANS, MAY 5-8.

- Florida Medical Association, St. Augustine, April 8.
- Western Ophthalmological and Oto-Laryngological Association, Indianapolis, April 9-11.
- Tennessee State Medical Society, Nashville, April 14-16.
- Medical Association of Georgia, Columbus, April 15.
- South Carolina Medical Association, Sumter, April 15-16.
- Iowa State Medical Society, Sioux City, April 15-17.
- Mississippi State Medical Association, Greenville, April 15-17.
- Medical Association of the State of Alabama, Talladega, April 21.
- Medical Society of the State of California, Santa Barbara, April 21.
- Medical Association of the State of Missouri, Excelsior Springs, April 21-23.
- Kentucky State Medical Society, Louisville, April 22-24, 1903.
- Texas State Medical Association, San Antonio, April 28.
- Louisiana State Medical Society, New Orleans, April 28-30.
- Medical and Chirurgical Faculty of Maryland, Baltimore, April 28-30.
- Nebraska State Medical Society, Lincoln, April 28-30.
- Illinois State Medical Society, Chicago, April 29-May 2.
- Arkansas Medical Society, Jonesboro, April 30-May 2.
- Association of American Medical Colleges, New Orleans, May 4.
- American Proctologic Society, New Orleans, May 5.
- Kansas Medical Society, Concordia, May 6-9.
- American Academy of Medicine, Washington, D. C., May 11-12.
- American Association of Genito-Urinary Surgeons, Washington, D. C., May 12-14.
- American Surgical Association, Washington, D. C., May 12-14.
- American Therapeutic Society, Washington, D. C., May 11-13.
- American Medico-Psychological Association, Washington, D. C., May 12-15.
- American Ophthalmological Association, Washington, D. C., May 13-14.
- American Orthopedic Association, Washington, D. C., May 12-14.
- American Pediatric Society, Washington, D. C., May 12-14.
- Association of American Physicians, Washington, D. C., May 12-14.
- Oklahoma Territorial Medical Association, Guthrie, May 12.

Florida Medical Association.—The thirtieth annual session will be held in St. Augustine, April 8, 9 and 10.

North Texas Medical Association.—This association has been incorporated at Sherman by Drs. Joseph M. Fort, Paris; J. T. Wilson, Sherman, and Bacon Saunders, Fort Worth.

Medical Society of the State of North Carolina.—The fiftieth annual meeting will be held at Hot Springs, June 2, 3 and 4. An especially attractive program is being prepared to honor the semi-centenary of the society.

San Bernardino (Cal.) Medical Society.—This society held its annual meeting and banquet, March 11. Dr. C. Van Zwalenburg, Riverside, was elected president, and Dr. Joseph A. Champion, Colton, secretary and treasurer.

Wichita (Kan.) Academy of Medicine.—About fifty physicians of Wichita met, March 16, adopted a constitution and

organized an academy of medicine, with the following officers: Dr. James E. Oldham, president, and Dr. J. M. Jacobs, secretary.

Kansas City (Mo.) Medical Library Association.—The Jackson County Medical Society and the Kansas City Academy of Medicine have joined in incorporation of the Kansas City Medical Library Association to establish a library for the medical profession of Kansas City and its vicinity. The collection now numbers about eight hundred volumes.

San Joaquin Valley (Cal.) Medical Association.—At the fifteenth semi-annual meeting held in Fresno, March 10, the following officers were elected: Dr. Joseph D. Davidson, Fresno, president; Drs. Walter E. Lilley, Merced, Nathaniel P. Duncan, Hanford, and M. L. Pettit, Visalia, vice-presidents; Dr. John R. Walker, Fresno, secretary, and Dr. Thomas M. Hayden, Fresno, treasurer.

Chicago Medical Society.—At its meeting, March 25, the society elected the following fifteen councilors-at-large: Drs. Charles S. Bacon, Arthur D. Bevan, Frank Billings, W. S. Christopher, N. S. Davis, Joseph B. DeLee, Arthur R. Edwards, Adolph Gehrmann, David W. Graham, Malcolm L. Harris, Ferdinand Henrotin, James B. Herrick, Louis L. McArthur, Walter Van Hook, and George W. Webster. Fifteen other councilors will be elected by the branches and affiliated societies. The councilors constitute the governing body and will elect the president and other officers and trustees at the June meeting.

Aberdeen District (S. D.) Medical Society.—This society, which comprises twelve counties in the northeast corner of the state, held its annual meeting at Aberdeen, March 17, at which the following officers were elected: Dr. Charles B. Mallery, Aberdeen, president; Dr. Lynn A. Pickering, Warner, vice-president; Dr. Henry J. Rock, Aberdeen, secretary and treasurer; Dr. Robert Hill, Ipswich, censor for three years, and Dr. Henry J. Rock, Aberdeen, delegate to the next meeting of the state association. After the routine business and reading of papers, a banquet was served in honor of Dr. H. E. McNutt, Aberdeen, at which he was presented with a fine fur-lined overcoat, as a slight testimonial of appreciation of his successful efforts in improving the standard of the profession in the state by the passage of the new medical bill requiring examination.

BUFFALO ACADEMY OF MEDICINE.

*Meeting of the Section on Pathology, held
March 17, 1903.*

Dr. Irving P. Lyon in the Chair.

The Cardiac and Vascular Complications of Typhoid Fever.

DR. W. S. THAYER of the Johns Hopkins Hospital, Baltimore, read this paper.

Among the cardiac complications of typhoid fever we first meet acute endocarditis. The bacillus of typhoid fever has been found in this lesion. Pericarditis is a rare complication, while myocarditis is met extensively. Acute myocarditis complicating typhoid gives its clinical symptoms. Among the vascular complications we find acute endarteritis and arterial thrombosis. Gangrene of extremities due to this change has occurred.

As an exhibit under the microscope, Dr. Thayer presented a section of acute coronary endarteritis. The venous changes are better known than the arterial, e. g., venous thrombosis, which is secondary to a phlebitis. The typhoid bacillus has been found in the wall of the vessel.

In the reports of the Johns Hopkins Hospital from May, 1899, to Jan. 1, 1901, there were 1,357 cases of typhoid fever. Of these 122 cases were fatal, or about 9 per cent. In 156 cases the pulse was over 140. In only 2 per cent. of cases was the pulse under 50, in these latter cases there was no death; all convalesced. In 215 cases there were cardiac murmurs on admission; the murmurs were mostly soft systolic. A peculiarity about these murmurs was that they were only noted on first examination, not afterwards. The excitement incidental to admission, etc., can account for this. Diastolic murmurs were not met with unless the patients have given a history of having same previously. In all there were two cases of pericarditis and two cases of endocarditis. These cases were reported and were interesting. The two cases of acute endocarditis unsuspected during life were, therefore, only found at necropsy.

In regard to vascular changes in these cases reported, there were 38 cases of venous thrombosis, of which 5 were fatal.

Of these 38 cases, 36 were of the lower extremities, and mostly the left side. Thrombosis of the left iliac vein was comparatively frequent in connection with lower extremities. In all these cases of venous thrombosis this complication occurred toward the end of the fever. The typhoid thrombosis was found in one thrombus. Of the 122 fatal cases, autopsies were had in 87 cases.

Dr. Thayer urges a more general examination of the arterial lesions to see frequency of involvement. In several cases the aorta and mitral valve were involved. One hundred and twenty-six cases were accurately examined and blood pressure noted in the recumbent posture in bed. The ages varied from 8 to 69, the majority being under 30. Of these 126 cases 8 developed cardiac complications after admission. In 52.3 per cent. of the cases the radial was palpable. In 46 per cent. of the cases the radial was not palpable. The few remaining were not reported. In 110 cases the blood pressure was above normal.

Dr. Thayer did not make any general conclusions, wishing, rather, to excite the interest and the more minute examination of these complications in typhoid fever.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Injectons of Yolk of Egg in Tuberculosis.

Dr. T. Boyle, in "Amer. Jour. Med. Sciences," recommends the use of the yolk of the egg, combined with equal parts of a normal salt solution, administered hypodermically. One ounce may be introduced beneath the skin without producing local irritation. He claims that the lecithin, normally present in the yolk of the egg, does not undergo the molecular change which takes place when it passes through the digestive tract. The mode of introduction hypodermically is recommended only when the digestive processes are not normal. The lecithin of the yolk is more stable than that put on the market.

Ipecac in Pneumonia.

The following method has been recommended by Perreau, in "St. Louis Clinic," in the treatment of pneumonia:

R. Pulv. ipecac.	gr. xv	1
Mucil. acaciae	℥iii	90

M. Sig.: One teaspoonful every hour for eight doses.

Care should be observed to avoid vomiting and diarrhea by lengthening the intervals between the doses. The author states that by this method of treatment the lung is depleted and counteracts microbial infection. He reports splendid results, especially when the treatment has been begun early.

Acute Laryngitis.

The following combinations are recommended by "Merck's Archives" in the treatment of acute laryngitis:

R. Potass. cit.	℥iv	15
Dionin	gr. vi	35
Tinct. aconite.	m. xxiv	160
Spts. etheris nitrosi		
Syr. toluani, aa.	℥vi	24
Aquæ q. s. ad.	℥iii	90

M. Sig.: One teaspoonful in water every two hours to relieve the cough, fever and hoarseness; or:

R. Menthol.	℥iiss	6
Olei pini sylvestris		
Olei eucalypti		
Tinct. benzoini		
Tinct. toluani, aa.	℥i	4

M. Sig.: To be used as an inhalation from a steam kettle several times daily.

Ulcer of Stomach.

Westphalen, in an abstract in "Med. Press," recommends in the treatment of round ulcer, that in the beginning nothing be

given by the mouth, except a little cold tea or Vichy water or small pieces of ice. Nutrient enema may be used during this period if necessary. This period of starvation by the mouth may continue over a period of from six to sixteen days. Then the author gives four glasses of milk daily, increasing the quantity half a glass each day. After another period of ten days he adds soups and more solid food. He advises the continuance of fresh milk or whey, with cream, as they reduce the hyperacidity of the stomach, the milk keeping the motor function of the stomach at a minimum. He also recommends bismuth in heaping teaspoonful doses, in a glass of water before breakfast in the morning. The diet should be regulated for a year. The patient should be kept in bed for three weeks at the beginning of the treatment.

Syphilis.

Horwitz, in the Amer. Text-Book of Ther., recommends the following in the treatment of the initial chancre:

R. Unguenti hydrargyri nitratis.	gr. xx	130
Unguenti iodoformi		
Balsami peruviana		
Unguenti belladonnae		
Unguenti zinci oxidi, aa.	℥iii	8

M. Sig.: Apply locally. The patient should be instructed not to allow the salve to remain too long in contact with the parts; otherwise it will become rancid and cause greater injury than benefit.

The following ointment is also recommended:

R. Unguenti hydrarg. nit.	℥ss	2
Unguenti petrolati.	℥ss	15

M. Sig.: Apply locally.

Another excellent ointment of service in hastening cicatrization is composed as follows:

R. Unguenti hydrargyri oxidi rubri.	gr. viiss	50
Unguenti petrolati.	℥ss	15

M. Sig.: Apply locally. In the local treatment of the skin eruption the following is recommended applied to the sores after removing the crusts by the application of hot water to soften them:

R. Ung. hydrarg. nit.	gr. xv	1
Balsami peruv.	℥i	4
Ung. belladonnae	℥ii	8
Ung. iodoformi q. s. ad.	℥i	30

M. Sig.: As a local application.

The mucous patches may be easily controlled by instructing the patient to avoid all highly-seasoned foods, stimulants and such articles of diet as are liable to irritate the sores. Tobacco should be discontinued until the mouth is well. If the patches are superficial and not too numerous they should be touched with the following solution:

R. Argenti nitratis	gr. xxx	2
Aquæ destil.	℥i	30

M. Sig.: Apply once daily to the patches.

The following astringent mouth wash should be used:

R. Potassii chloratis	℥iii	12
Acidi tannici	gr. xx	130
Olei gaultheriae	gtt vii	35
Glycerini	℥ii	8
Aquæ q. s. ad.	℥vi	180

M. Sig.: As a mouth wash two or three times a day.

And for the alopecia, to stimulate the new growth of hair, the author recommends the following:

R. Hydrarg. chloridi corros.	gr. vi	35
Tinct. cantharidis		
Tinct. capsici, aa.	℥iii	12
Spts. ammon. arom.	℥vi	24
Spts. rosmarini	℥vi	180
Alcoholis q. s. ad.	℥xii	300

M. Sig.: Apply locally to the scalp with a sponge moistened in the solution and use thorough friction.

Rickets.

I. A. Abt, in "Archiv. of Ped.," recommends, in treatment of rickets, that the patient be kept out of doors in order to receive an abundance of fresh air and sunshine. During the first stages of the disease children should not occupy, for too long a time,

the same position in bed on account of the softness of the bones. Spinal curvatures may also occur in infants who are held or carried in the sitting posture. They should not be allowed to stand or walk too soon for the same reason.

As to the diet, it should be digested without giving rise to fermentation or putrefaction. The food should be fresh and should contain as much fat as the child can take care of; fruit juices, beef juice and the animal broths should constitute part of the diet.

The most useful medicinal preparation is cod liver oil, given pure in doses of one-half teaspoonful three times a day. It is not so well tolerated in the summer time and had better be omitted during the summer months. Phosphorus is also recommended, and by some authors it is classified as a specific in this disease. It is best prescribed in the form of Thompson's oil, every minim of which contains 1/100 of a grain of phosphorus. The usual dose is one-half a minim or 2/200 of a grain of phosphorus.

Baths are of decided therapeutic value. Salt baths are indicated in those children who perspire profusely.

Medicolegal.

Physician Can Not Enjoin Removal from Reformatory.—The case of Marshall vs. the Board of Managers and Superintendent of the Illinois State Reformatory was brought by the former to restrain the latter parties from removing him from the office of physician of said reformatory. But the Supreme Court of Illinois thinks it clear that the trial court did not err in dissolving the temporary injunction granted and dismissing the case for want of equity, as it says that it is well settled that the title to a public office and the right to exercise its functions can not be determined by a court of chancery unless express authority so to do is conferred on the court by statute, the remedy being in a court of law. This reformatory, it holds, is a penal institution, and the position therein of physician is an office, and a court of chancery has no greater power to determine the title to such office than the title to any other public office.

Unlawfully Exposing People to a Contagious Disease.—In Nebraska all public offenses are statutory, and no person can be punished for any act or omission not made penal by the plain import of the written law. In view of this, in the case of State vs. De Wolfe, where the latter was charged with having unlawfully exposed the citizens of a village to a contagious disease by negligently keeping an infected person in a public place, the district court held that no prosecution could be maintained for the acts complained of, the code failing to specify them. But the Supreme Court of Nebraska holds that the trial court erred in dismissing the action. It says that there is as much reason now as there ever was to repress conduct calculated to injure the health of the people. Without a clear expression of purpose so to do, it can not believe that it was the intention of the legislature to so limit the meaning of the word "nuisance" as to make conduct blameless which has always been considered inherently wrong and deserving of punishment. And while there are in the state no common-law crimes, the definition of an act which is forbidden by the statute, but not defined by it, may be ascertained by reference to the common law. So a statute declaring all common nuisances to be criminal is to be construed as prohibiting every act which was by the common law indictable as a nuisance.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Philadelphia Medical Journal.

March 21.

- 1 *A Review of the Recent Literature on the Intercommunicability of Human and Bovine Tuberculosis. John M. Swan.
- 2 *Cryoscopy. D. S. Grim.
- 3 Truncate's Serum and Its Value in Disturbed Cerebral Functions Caused by Circulatory Changes, with Report of Twelve Cases. Alfred Gordon.

- 4 *The Operative Treatment of Goiter. Ingersoll Olmsted.
- 5 *Psychopathic Epidemics. (To be continued.) John H. Huber.
- 6 A Case of Diabetes Mellitus in a Young Child. James H. Lloyd.

1. **Bovine and Human Tuberculosis.**—Swan reviews the literature and concludes that the two disorders are intercommunicable, and closes his article by summarizing Koch's paper and his arguments against this view. He thinks it is a mistake to adopt extreme opinions concerning the organism causing the disease, but holds that while there are differences, they belong to the same parent stock and are modified by their environment.

2. **Cryoscopy.**—The methods of cryoscopy are described by Grim, who also gives a review of the theories as regard to it as summarized in the following conclusions:

1. Cryoscopy can not replace, but only supplement, the older qualitative tests and microscopical examination of urines.
2. It is probably the most delicate test we possess in detecting and estimating the effect of therapeutic measures directed toward cardiac and kidney lesions.
3. It permits of reasonable accuracy in diagnosing renal insufficiency and the type of renal lesion present, though the examinations should be prolonged over a number of days; our conclusions coinciding with Lindemann's.
4. Uremia can not be diagnosed from the examination of the urine alone.

5. Cryoscopy of the urine from each kidney, obtained by ureteral catheterization, and especially when supplemented by the phloridzin and methylene blue tests, becomes a very delicate and reliable test in determining a unilateral kidney lesion and the degree of insufficiency of the affected kidney.

Because of an insufficient number of cryoscopic examinations of the blood, we can not criticize the "interchange" theory of Koranyi.

4. **Operative Treatment of Goiter.**—Kocher's methods and results are described by Olmsted. He mentions, in conclusion, that he has operated on twelve patients during the last year, all cases of simple goiter, and one of exophthalmic goiter, apparently with good results in all, though he does not give details, reporting briefly only two. The average time of residence in the hospital for treatment was seven days. The important points in operation are absolute asepsis, ligation of all the bleeding vessels, avoiding the wounding of the gland proper, and the preservation of the recurrent laryngeal nerve.

5. **Psychopathic Epidemics.**—In this first installment of his article, Huber describes certain delusions which are frequent and are still flourishing, such as Eddyism, mesmerism, the Sanford and Simpson delusions and the Dowieism craze.

New York Medical Journal.

March 21.

- 7 The Development and Ultimate Result of Medical Science. Andrew F. Currier.
- 8 *The Treatment of Felon. Edward Wallace Lee.
- 9 *Report of a Case of Epidemic Parotiditis, with Fatal Termination. W. J. S. Stewart.
- 10 *A Study of Tuberculous Infection—Special Susceptibility of Childhood—Causes and Methods of Infection—Factors of Development of the Disease. F. M. Pottenger.
- 11 *The Intravenous Injection of Formaldehyd. William L. Baner.
- 12 *The Hemorrhagic Diathesis as a Factor in the Production of Hemorrhage Following Removal of Tonsils and Adenoids. Frank H. Washburn.
- 13 The Treatment of Infantile Convulsions. (Concluded.) Adolph Goldhammer, O. C. Tarbox, and Edmund N. Huff.

8. **Felon.**—According to Lee, felon is a more serious matter than is usually supposed, and is very commonly maltreated. The method he suggests would be to give a general anesthetic with the patient in the recumbent position, with thorough asepsis, elevate the hand and arm to relieve congestion before the Esmarch bandage is applied, using slight digital pressure over the brachial artery, which will thoroughly bleach the parts before the bandage is put on. This, he says, is necessary to control the slight hemorrhage that would otherwise embarrass the operation. The hand is then placed on an aseptic towel, over a hard substance, and an incision made from a few lines back of the inflamed area to the tip of the finger, down to the bone, if necessary. The extent of the disease can be clearly seen as hemorrhage is repressed and all pus and debris should be cleaned out with peroxid of hydrogen, afterward washing the wound and cavity with a 1 per 1000 solution of bichlorid of mercury. All diseased tissue, integument, cellular tissue, tendon, periosteum and bone, etc., should be removed, not leaving a vestige; again washing the wound out with peroxid and bichlorid. The whole cavity should then

be swabbed with pure carbolic acid, immediately followed by a washing with alcohol, which will prevent over-action of the carbolic acid, and again washed with a 1 to 1000 bichlorid of mercury solution. The wound can be then closed and held in position with a snug compress, over which a dry gauze bandage is applied and over this a rubber tissue, and over all, including the whole hand, cotton gauze and a bandage, the arm and hand being placed on a splint and elevated. In four or five days the dressing can be removed. If the work has been well done the wound will be found closed, free from discharge and on rapid road to recovery. The same dressing should be reapplied, and four days more will show all the parts united. The wound now only needs a protective dressing until new epidermis and skin have formed. He thinks the results justify the pains taken in this method of treatment.

9. **Fatal Parotiditis.**—Stewart reports a case of a sailor who apparently died from heart failure, due to the excessive strain to which that organ has been subjected from embarrassed respiration for some hours before death. The obstruction was due to swelling from the parotiditis, but the death was unanticipated, as it did not seem so serious. He has not found any such case on record, nor ever read of a death from asphyxiation in this disease. It was not the immediate cause of death in this case.

10. **Tuberculosis of Childhood.**—Pottenger has studied tuberculous gland infection, etc., in children, and finds, from the facts and study of the literature which he reviews, that tuberculosis is common in childhood, causing about 25 per cent. of the deaths occurring during the last quarter of the first year, and quite a large proportion of those during the second and third years. Nearly all cases of tuberculosis show involvement of the lymph glands; and, if the fact that the process is furthest advanced is an indication, they are in a large percentage of cases to be considered the primary foci. Nearly all children show enlarged glands during the period of infancy and early childhood, of which investigation seems to show from 60 to 70 per cent. to be tuberculous, and, of those chronically enlarged, even a larger per cent. are so affected. A large proportion of those who have enlarged glands during childhood develop tuberculosis in later life; and it is probable that the gland was frequently the primary focus whence came the spread of infection. Why the bacilli do not cause a general tuberculosis in these children with lowered vitality has not been explained. It may be that they are less virulent, as has been shown by experiments, and it is possible that they meet with such opposition in these structures that they are unable to make further headway. He suggests that it will be well to collect all statistics to see if children exposed to tuberculous infection from parents and others do not have a more virulent form than those who receive their infection from less virulent sources. He thinks that the reason of the prevalence can be explained by the general mismanagement of children, their habits of putting everything into the mouth, creeping on the floor with exposure to dust, etc. Pottenger believes that many cases of tuberculosis in the adult are due to primary foci acquired in childhood. We are too apt, he says, to consider the infection as originating at the time it makes its marked appearance, though he would not say that adults can not acquire it. It is at the adolescent period that these foci are most liable to become active, during the special strain of sexual changes, social functions, studies, etc. It is the second period of life when the vitality is low and, as in early childhood, it is marked by an increased number of tuberculosis cases. From the total of his investigations he deduces the following general conclusions:

1. Tuberculous infection is very common in early childhood.
2. A large proportion of those patients who, although infected, do not show acute symptoms during childhood, develop active tuberculosis in later life.
3. In seeking the cause of this frequent infection, aside from the habits of the child and the carelessness of the parent bringing in frequent contact with the bacillus, all those things which lower vitality at this time must be considered; and, I would call special attention to the fact that there is a connection which seems more than coincidence in the time that tuberculous infection takes place and the time that the child is most apt to suffer from catarrhal conditions of the stomach and bowels.
4. More attention should be given to the care and feeding of children, so that their systems may be resistant to infection.

5. All tuberculous children, whether they have lesions in the glands, bones, lungs, or any other part of the body, should be treated for their disease.

11. **Formaldehyd Intravenous Injections.**—Baner notices Barrow's experiences and the experimental results of Fortescue-Brickdale and others, and says from the available facts it seems improbable that formaldehyd used intravenously has a specific value in sepsis. One thing suggests itself to him, however, that we are too apt to be forgetful of the intravenous route in cases of intense toxemia, and rely too much on hypodermoclysis and the rectal enema for that dilution of the toxins which gives the poisoned tissues a breathing spell, as it were, and enables them to keep up the battle. The intravenous injection of antiseptics probably does not kill the bacteria in the blood in septic cases, but does dilute the toxins. A normal saline solution by the same route will do this equally well, and there is less danger probably of injuring the blood.

12. **Hemorrhagic Diathesis.**—Washburn reports a case of severe hemorrhage following removal of tonsils, with subsequent recovery, and discusses the possibilities of hemorrhagic diathesis in these cases.

Medical News, New York. March 21.

- 14 *Some Types of Retinitis and Chorioretinitis. Alexander Duane.
- 15 *The Indications for Operative Interference in Intracranial Tension. Frederic S. Dennis.
- 16 *A Preliminary Report of the Venous Hum in Relation to the State of the Blood. C. N. B. Camac.
- 17 Some Physiological Observations on a Crustacean Heart. (To be continued.) George V. N. Dearborn.
- 18 *Pneumonia. An Infectious Disease. J. O. Cobb.
- 19 *Observations on American Climates and Localities in the Treatment of Pulmonary Tuberculosis. James K. Crook.

14. **Retinitis and Chorioretinitis.**—The types here noted by Duane are focal exudative chorioretinitis, occurring with acute onset, rapid course and a generally favorable prognosis, usually in young people and often without apparent cause, marked by the presence of single circumscribed exudates situated usually not very far from the optic disc; often associated with considerable edema and milkiness of the surrounding retina and impairment of vision depending on the site of the exudate. The salicylates, calomel in broken doses and rest in bed seem to furnish the best treatment. Second, plastic chorioretinitis, another form characterized by pretty sharply defined whitish aggregations of connective tissue, which may be sunk in the substance of the choroid or retina or may project out into the vitreous, even as far as the lens or the ciliary body, attributable to organization taking place in the fibrous exudate. They may develop in conjunction with a disseminated choroiditis or may accompany a retinitis, in which case they very frequently originate in a patch of hemorrhage, or they may also probably occur as a result of hemorrhage without inflammation of either retina or choroid. Once developed the plastic products are apt to remain unchanged for years, though the milder forms may be capable of absorption, with often great reduction of size. Mercury and the iodids seem to be the best treatment. The last form mentioned is retinitis circinata, which may appear in atypical forms, a case of which is here described.

15. **Intracranial Tension.**—The conditions of intracranial tension are described and illustrated by a case reported by Dennis. He remarks that the tension may be extreme, and mentions an instance where, after trephining and opening the dura, the clot made its way from the lateral ventricle through the track made in the cortex, through the slit in the dura mater and through the trephine hole, with such force as to be projected several feet in the air. The author considers that operative interference is indicated in many cases. In some the indications are very clear, while in others they are somewhat doubtful. A deep coma, in his opinion, calls for operation, and where this does not occur, if the symptoms are gradually increased in severity, it may save life. The problem, however, is hard to solve as to just when operation is demanded in some cases.

16. **Venous Hum.**—Camac tabulates a number of cases in which venous hum was present with a decidedly marked percentage of hemoglobin. He thinks the cases are not those of

incipient chlorosis. The practical point is that pallor and even a cervical bruit may not indicate anemia. The blood should be examined to determine this point.

18. **Pneumonia.**—The infectious nature of pneumonia is argued for by Cobb, who points out that it is largely a disease of cities and of overcrowding. He considers that cold and dampness have very little to do with its spread, though dryness is a considerable factor. He thinks the more rational explanation of its more frequent occurrence is that in the severe, dry winters the atmosphere is dryer than at other times and, the weather being severe, people tend to huddle more in places of amusement, in business and in homes, and the air becomes more and more infected. It is a disease, he claims, incident to overcrowding and can only be stamped out by careful attention to ventilation.

19. **Climate and Tuberculosis.**—Crook speaks of the advantages of climate, and mentions the localities which are suitable for various cases. In the early stage of the ordinary case with slight lung involvement and little constitutional disturbance there is usually improvement with change of climate. Catarrhal cases, with profuse secretion, should have a dry climate, preferably a warm one like Arizona. They usually do poorly in moist climates. Persons of the nervous, irritable and erethistic temperament do better in a marine climate, and should not be sent to high elevations. Sir Hermann Weber advises against sending cases of ulcerative tuberculous laryngitis to high elevations. Most chronic, slowly progressing cases, especially of fibrous phthisis, do best in a marine climate. Cases complicated with heart disease should be kept at a low elevation. Cases involving much loss of lung substance or a large portion of the respiratory area from any cause, usually fare badly at high elevations. The low desert land of Arizona would seem to be the ideal climate for such patients. Puny, scrofulous-appearing youths, not actual, but potential or probable cases of tuberculosis, are generally benefited by prolonged residence in high mountainous regions. There has been considerable difference of opinion as regards the proper climate for hemorrhagic cases. The author thinks that the best observers are beginning to agree that the occurrence of hemorrhage is no bar to high altitude. The tendency to pulmonary hemorrhage does not in itself furnish an indication for or against a particular variety of climate. He is also unable to find evidence that cases of phthisis with albuminuria or marked diabetes should be kept away from high altitudes, but he thinks it would be generally unwise to send them far from home. For those who can not take advantage of change of climate, there should be a sanatorium close to their home.

Medical Record, New York.

March 21.

20 *The Present Status of the X-Ray Treatment of Malignant Tumors. William B. Coley.

21 *Sigmoidproctectomy for Cancer of the Rectum. George W. Roberts.

22 A Case of Adenoids with Malaria. Walter F. Chappell.

20. **The X-Ray in Malignant Disease.**—Coley gives a general review of the x-ray treatment, reporting a number of cases. He says in conclusion:

We find abundant evidence that the x-rays have an inhibitory action on all forms of malignant tumors. Yet, the number of cases is insufficient to enable us to state what particular varieties are most susceptible to this influence. So far it would seem that sarcomas primary in the lymph glands yield most readily to the treatment. Superficial epitheliomas might be placed in the same category. Several cases of recurrent carcinoma of the breast have been observed in which the growths have entirely disappeared after prolonged exposures of the x-rays. Yet all these cases have been too recent to be classed as cured. In fact, sufficient time has not yet elapsed in a single case of cancer treated with the x-ray to justify us in regarding it as cured. While this should, on the one hand, prevent us from reporting patients as cured in whom the tumors have merely disappeared under treatment, it should not, on the other hand, lead us to minimize the importance of these immediate results, even be they no more than a prolongation of life or an alleviation of suffering. One can not witness the marvelous melting away or disappearance of an undoubtedly malignant tumor under a few weeks' or months' treatment with the x-ray, without feeling that we have a new and powerful addition to our hitherto scanty means of attacking this disease. The knowledge of this new agent is so slight that there is added hope in our very ignorance. For, by deeper insight into its nature, gained by further experience, we may hope to better utilize its power, and thus accomplish greater results. In the meantime, while the x-ray has a legitimate place in the treatment of inoperable cancer, present data do not warrant us in advising the method in primary operable cases.

21. **Sigmoidproctectomy.**—Roberts' article describes the technique in detail, for which the reader is referred to the original. He reports several cases.

American Medicine, Philadelphia.

March 21.

23 *Excision of the Superior Maxillary Under Medullary Narcosis. A. W. Morton.

24 *On the Transportation of Cellular Emboli Through the Thoracic Duct into the Lungs. W. G. MacCallum.

25 *The Albumoses: Their Clinical Significance Viewed from a Modern Standpoint: Their Detection and Distinction from the Other Proteids Found in the Urine as a Means of Lowering the Death-Rate in Obsecure Suppurative and Other Diseases. Thomas J. Yarrow, Jr.

26 *Influence of Marriage and Pregnancy on Diseases of the Heart. M. J. Backenstoe.

27 The Report of a Case of Malignant Edema. Isaac R. Trimble.

28 *Briefs on Physical Training. G. Frank Lydston.

29 Some Problems of Preventive Medicine. (Concluded.) Burnside Foster.

30 National Bureau of Medicines and Foods: For Pure and Honest Drugs, Chemicals and Foodstuffs. Philip M. Jones.

23. **Spinal Anesthesia.**—The case reported by Morton is of interest, as showing how high an operation may be performed under this method. The operation is the same and one of the illustrations is the same as was reported in THE JOURNAL of Nov. 8, 1902. He thinks the advantages of the method are that the anesthetizer is out of the way of the operator; avoidance of the danger of blood and secretions getting into the lungs and causing later pulmonary complications; the facts that heart disease or lung or kidney complications do not prevent it, and finally, that the shock is not so severe. He has used it in 929 cases; 76 were operations above the diaphragm, and many were similar operations to that reported.

24. **Cellular Emboli in the Lungs from the Thoracic Duct.**—MacCallum has not found any description of extensive affections of the lungs due to the cause suggested in this title, but reports a case, which he finds best explained in this way. He says we have here evidently to deal with multiple hemorrhagic infarctions of the lungs, produced by plugging of the branches of the pulmonary artery with masses of cells of the type of the lymphoid cells and larger mononuclear phagocytic cells. What is the origin? He suggests that this can be best explained by their being carried through the thoracic duct and into the subclavian vein. He thinks the study of such possibilities has not been made sufficiently thorough, though they seem to have some important bearings.

25. **Albumoses.**—Yarrow gives a lengthy article discussing the tests and clinical significance of albumoses in the urine. He thinks we have in them a very valuable aid in diagnosing concealed pus collections which has not been, to any great extent, taken advantage of, and illustrates his views by a number of brief reports of cases. He enumerates a number of conditions in which this examination might be of value. The recognition of the fact that pus is often present may relieve a situation of some of its danger and offer a chance for early operation. He is opposed, like Deaver, to placing absolute reliance on the presence or absence of leucocytes, and thinks the additional test is of some value.

26. **Marriage and Heart Disease.**—The question as to whether marriage should be advised in case of heart disease is noted by Backenstoe, who thinks we should study the degree of the disorder, especially if it is giving rise to cardiovascular symptoms, such as hemoptysis and dyspnea, and in these cases marriage should be advised against. The situation of the patient as regards occupation and environment should be taken into account, and the ability to keep quiet in case unfavorable symptoms make their appearance. If the conditions are all favorable there is no objection, but the condition of the heart should be carefully watched. All effort or fatigue should be avoided in case of pregnancy. He attributes considerable importance to the preventive action of a mixed milk diet, the milk being consumed at the rate of two quarts a day. He would not offer serious objection to marriage in the absence of cardiovascular symptoms of a certain gravity when the patient is willing to promise to follow this diet in case of pregnancy.

28. **Physical Training.**—The concluding article of Lydston reviews the more valuable forms of athletics. He thinks that

outdoor exercise is excellent, better than gymnasium practice, and the element of play should come into it as an essential. A person should have a thorough physical examination before undertaking practical athletics. The ideal form of outdoor exercise is boxing for men, and fencing is the ideal form of athletics for women. Wrestling, within proper bounds, is especially good, but it is hard to thus restrict it. Non-professional ball playing is good. Football, he thinks, is too brutal, especially as there is a chance of rowdiness. His conclusions are given that physical training is an important part of preventive and curative therapeutics, and should be taught in medical schools. Such departments of medicine as neurology and surgery, particularly orthopedic surgery, are especially enriched by a knowledge of physical training on the part of the physician. The aim should be to utilize the inherent physical capital of the individual and bring it up to the physiologic standard. Physical and intellectual development should go hand in hand. He thinks these would tend to reduce pauperism and crime if properly followed. Comparative measurements are not to be relied on. Specialism in muscle building is justified only in so far as it tends to bring up any given portion of the body to the relative proportions normal to the particular individual—to the normal symmetry. Occupation should be considered. The highly trained muscles are useless and perhaps injurious to those of sedentary occupation, and tend to muscle and visceral degeneration, and the tendency of certain individuals to become muscle and joint bound is a point which should be guarded against. The athletic habit should be guarded against, as well as athletic overstrain. The ideal system of muscle building is that which involves the least expenditure of time and the use of the least apparatus. Abdominal muscle development is the keynote of success. Of practical athletics the best forms are boxing, fencing and handball. All are best performed in the open air. Golf is admirable in this respect. The element of play, diversion of the mind and cheerful companionship is a *sine qua non* in obtaining the best results.

Boston Medical and Surgical Journal.

March 19.

- 31 An Account of Dr. Thaddeus MacCarty—A New England Country Doctor of Pre-Revolutionary Days. Edited by Burnside Foster.
- 32 **Lipoma Arborescens*. Charles F. Painter and William G. Erving.
- 33 Suppuration of the Frontal Ethmoid, and Sphenoid Sinuses, with Brief Report of the Treatment of 237 Cases. (To be continued.) Edgar M. Holmes.

32. *Lipoma Arborescens*.—This disorder, consisting in fatty growths of the joints in connection with arthritis and tuberculosis, is described by Painter and Erving, who report seven cases. The clinical symptoms are those of a foreign body, and the authors think that in the absence of other evidence of tuberculosis it is reasonably certain that isolated villous hypertrophies without more symptoms of joint disease will not be found to be due to tuberculous infection in the cases they report. They briefly review the literature, remarking that while the condition has been noticed in pathologic works it has received very little attention in surgical text-books. The clinical picture is that of a more or less swollen joint without any signs of acute inflammation, and most commonly without even any excess of fluid. The growth sometimes produces pain; more often pain is absent, but there is often impairment of motion from locking of the joints. The tumors are attached to the synovial membrane by a pedicle, usually slender, consisting mainly of blood vessels in a mass of small round cells. In structure they vary from a soft, fatty to a tough, fibrous growth. They are very vascular, and after removal shrink to a great extent. The bulk of the mass consists, however, of normal adipose tissue, through which run bands of varying width of fibrous tissue. They adopt practically Stieda's conclusions that it is etiologically a chronic inflammatory condition of the joint. It is not a lipoma in the sense of being a new growth, but is merely a hypertrophy of normal pre-existing tissue, a hyperplasia and fatty degeneration to an extreme degree of pre-existing synovial tabs. Diagnosis is not certain in an unopened joint. Prognosis of spontaneous healing and recovery of joint function is unfavorable. They disagree, how-

ever, with Stieda's conclusions, in giving less importance to tuberculosis in the etiology.

Cincinnati Lancet-Clinic.

March 21.

- 34 Valedictory Address. Academy of Medicine of Cincinnati. A.
- 35 Academy of Medicine of Cincinnati.
- 36 Surgery of the Prostate, Pancreas, Diaphragm and Spleen. (Continued.) B. Merrill Ricketts.

Medical Age, Detroit.

March 10.

- 37 *Treatment of Pneumonia. R. T. Morris.
- 38 Corneal Burns. E. M. Marbourg.
- 39 Nervous and Mental Phenomena of Arterio-capillary Fibrosis and Atheroma. J. E. Courtney.
- 40 Chloroform Anesthesia. E. T. Duke.

37. Treatment of Pneumonia.—Morris reviews the various treatments of the past and those recommended at present. He does not find that creosote bears out the praises that have been given it. More extended experiments should be conducted. Quinin has been advised and a very low mortality reported under its hypodermic use, but it should be further tried. Anti-pneumococcic serum has not met the full expectations, though many are hopeful of better results. Saline infusions are also similarly noticed. He advises to treat the patient and then the pneumonia incidentally. If the patient is strong and robust, depletion at the outset, calomel and soda, 5 grains each, followed by magnesium sulphate, morphin to relieve pain, pleasant surroundings, equable temperature with an abundance of pure air, dry cold to chest to relieve temperature, followed by the tepid bath, if necessary. Beginning on the second or third day concentrated nourishment every three hours, day and night. Strychnin, digitalis and whisky if heart shows any indication of weakness, and if collapse is imminent, hot applications and saline infusions. If the patient is of low resisting power, do not deplete, but support and nourish from the commencement. If the patient is accustomed to drink, continue it in increasing dose. He thinks that following such a course one has done all that our present knowledge warrants.

Brooklyn Medical Journal.

March.

- 41 *Epidemic Parotitis with Metastasis to the Female Genitalia; with Report of a Case. George McNaughton.
- 42 Raw Cow's Milk in Infant Feeding. Elias H. Bartley.
- 43 *Diagnosis of Primary Syphilis. G. Morgan Muren.
- 44 Some Considerations on Intra-Pelvic Infection, with Reference to Rational Treatment. Walter B. Chase.
- 45 Regional Tuberculosis. F. E. Lambert.

41. Metastasis to the Female Genitalia.—Summing up the literature, McNaughton finds that the localization of the disease in the region of the ovaries in mumps is more frequent than is generally supposed. The fact that the complication is observed less frequently in girls than in boys is due to the lesser accessibility of the parts. He reports a case.

43. Diagnosis of Primary Syphilis.—Muren reviews the theories of authors as regards the propriety of early treatment of syphilis, finding that the great majority, in fact, all but one leading American syphilographer, believe in the advisability of delay of syphilitic treatment until secondary symptoms have appeared.

Medicine, Detroit.

March.

- 46 *The Prognosis in Pneumonia. J. M. French.
- 47 *Method of Stamping Out Yellow Fever Suggested Since 1899. Carlos J. Finlay.
- 48 The Diagnosis of Chronic Interstitial Nephritis Based upon Physical Signs, Chiefly Cardiovascular. Charles L. Mix.
- 49 Bacillus Coll Communis. Veranus A. Moore.
- 50 Report of a Case of Disarticulation of the Hip for Sarcoma of Femur, with Remarks upon the Diagnosis and Prognosis in Sarcoma of the Femur. A. E. Halstead.
- 51 A Case of Hypertrophic Cirrhosis of the Liver, with Splenomegaly in a Young Man. Augustus A. Esbner.

46. Prognosis in Pneumonia.—French first notices the increase of pneumonia, its significance, if any, and the reduction of its mortality. He emphasizes the prognostic elements as, first, age, which he finds is well known, advanced years influencing mortality. As regards catarrhal pneumonia, the rule of Ziemssen that the danger increases in proportion to the youth still holds good. As regards sex, he thinks statistics show, if anything, a rather greater mortality among women, though the number of cases occurring is much less. Habits and consti-

tution have much to do with it. The percentage of deaths is large among alcoholics and degenerates. Pregnancy adds to the danger, as well as heart disease. Traumatic pneumonias are very fatal. Fleishy people suffer more than thin ones. The amount of lung tissue involved also influences mortality, the danger increasing with the amount. The upper lobes are somewhat more dangerous than the lower. The involvement of both lungs makes the prognosis more serious. Of the various complications, heart disease as well as meningitis is almost always fatal. Affections of the kidneys are dangerous. Catarrhal or capillary bronchitis is always a dangerous complication. Something is said also as regards the severity of the epidemic, which is emphasized by Osler, who considers the toxemia the most important element in the disorder. Of the individual symptoms most reliance is to be placed on the pulse. A pulse in the adult of over 120 or in children of over 140, is of grave significance, according to Quain. Marked irregularity in force or rhythm, especially in the young, is a bad sign. The table given by Sears and Larrabee seems to illustrate the law that the mortality in pneumonia is in direct ratio to the frequency of the pulse. The line of average mortality seems to be drawn at a pulse rate of 130. Below that the mortality is less than the average of 35.9; above it is higher than the average. The variations in respiratory rate follow much the same law, though the importance of respiration is much less than that of the pulse. The importance of temperature as a prognostic element is generally recognized as second only to that of the pulse, but it does not follow the same laws, according to Sears and Larrabee's figures. It seems to show a steady decrease of mortality corresponding to a rise of temperature up to 105, after which the mortality again rises, increasing with the temperature. That the mortality should be so great below 100 would be more remarkable if the number of cases were larger. The line of comparative safety would seem to be between 103 and 105, with the danger increasing above and below these figures. As regards treatment, there seems little from their studies that is encouraging, and they conclude that pneumonia is uninfluenced by treatment. French, however, is disinclined to accept this conclusion, and hopes the time will soon come when treatment will be universally admitted to be an important element in the prognosis of pneumonia.

47. Yellow Fever.—Finlay claims that he had pointed out the principal facts in regard to yellow fever from his clinical observations, that were subsequently determined by the yellow fever commission, differing only slightly. He thinks his right of priority has been tacitly denied by the Army board, their work only verifying the conclusions he had already reached and the results which have been so brilliant were those he had already pointed out as being probable.

Archives of Pediatrics, New York. March.

- 52 *An Analysis of Twenty-six Cases of Mongolism. John Muir.
- 53 A Case of Autointoxication, with Neutral Magnesium Phosphate in the Urine. Charles G. Jennings.
- 54 *Clinical Observations on Circulatory Failure in Acute Infectious Disease. Augustus Caillé.
- 55 Sudden Death of an Infant Six Months Old Due to Compression of Large Blood Vessels by an Enlarged Thymus Gland. Augustus Caillé.
- 56 Amygdalitis Followed by Appendicitis, Nephritis and Endocarditis. E. W. Mitchell.
- 57 A Key to the Home Modification of Bottled Milk. J. F. Connors.
- 58 Report of a Case of Tetany. T. J. Elterich.

52. Mongolian Idiocy.—Muir has investigated 26 cases and discusses the condition generally. He found a history of drunkenness in 4 cases of his 26; 4 cases with either a family history of insanity or eccentricity; in 3 the father was violent in temper; in 1 the father was a suicide; in 4 the mother was a neurotic and excitable; in 3 cases there were twins or triplets in the family; in 3 the intra-uterine movements were hardly felt; in 3 the mongol was premature; in 1 a previous child was anencephalous; in 8 the labor was prolonged or complicated; and in about one-half the cases a statement of fright or worry was reported. Only 38 per cent. of the cases had tuberculosis in the parents and only 3 had syphilis. In 15 cases the mother had bad health during pregnancy. Fifteen were males and 11

females. He describes the symptoms, appearances, and the data as to physical development of the patients. Fourteen of the cases were idiocy of the low grade, 4 medium, and 7 of a high grade. Speech came late. The best-educated one knew his own name, could spell "Monday," and knew the year and month, knew all the figures and some of the letters. The prognosis seems bad in these cases. Treatment has been of no avail and thyroid treatment was useless.

54. Circulatory Failure.—This is a brief preliminary report dealing with circulatory failure from direct loss of blood, shock, loss of blood and sepsis combined, and sepsis in acute infectious disease. In shock and hemorrhage it would appear that saline infusions and also hypodermoclysis can be promptly and safely used. The infusion has an immediate effect and the hypodermoclysis improves the circulation in five to ten minutes. Both are more rapid in effect than drugs and apparently increase the effects of the drugs given. It is safe to continue with the saline until the pulse is of good quality, and then to stop it. From a study of septic cases treated by saline infusion it seems that it would be safe to reserve this for septic cases where there has been decided loss of body fluids, as in severe choleraic or typhoid diarrhea. In cases of sepsis without loss of body fluids and with an imperceptible pulse and rapid respiration and a very rapid thumping of an undilated heart, saline infusions and hypodermoclysis may be warranted, but should never be employed in a routine way or when the heart's action is hampered by pericardial effusion. Seven of the 8 septic cases—the basis of this report—were looked on as hopeless and the ultimate recovery of 4 out of the 8 was in every way satisfactory, considering the gravity of the cases. Enteroclysis properly carried out with Kemp's flexible double current catheter, fifteen minutes' flow of water at 110 F., seems to be an absolutely safe method of combating circulatory failure in sepsis. It stimulates the kidneys, eliminates poisons, induces intestinal absorption of water when the body craves for it, reduces temperature to a certain degree and seems to be indicated as a routine treatment in all septic conditions, even if the kidneys are unimpaired. In severe anemia, Caillé has found that enteroclysis is followed by an actual improvement of the blood mixture, independent of the administration of drugs. In conclusion, he emphasizes that circulatory failure is not always heart failure, and more attention should be given to this fact. Enteroclysis properly carried out should be universally adopted in the practice of medicine as a therapeutic measure of undoubted value when increased elimination through the kidneys is desired, as in all forms of infective disease and in faulty metabolism generally. It may also be given in connection with medicines.

Journal of Nervous and Mental Disease, New York. March.

- 59 *Report of Two Cases of Bullet Injuries to the Left Lateral Half of the Upper Portion of the Spinal Cord. J. T. Eskridge and Edmund J. A. Rogers.
- 60 *A Study of Sensations in Motor Paralysis of Cerebral Origin, Based upon Thirty-five Cases. Alfred Gordon.
- 61 Report of a Case of Mamillary Tremor of the Head. John K. Mitchell.

59. Bullet Wound of the Spinal Cord.—Two cases of gunshot wound of the upper left lateral half of the spinal cord are reported by Eskridge and Rogers. The direct cerebellar and the crossed pyramidal tracts were cut across in both, but the extensive inflammatory softening and the hemorrhagic infiltration came on early and the rapidly fatal termination prevented the valuable data as to localization which was desired. Still some interesting points were noted suggesting that there are fibers in the cervical region of the spinal cord that aid in elevating the upper lid of the eye of the same side, and in modifying the size of the pupil of the opposite side. These results are opposed to what has been found by experiments, but the conditions are somewhat different.

60. Sensations in Motor Paralysis.—Thirty-five cases of hemiplegia have been studied by Gordon, with special reference to sensory disturbance and their cerebral localization. He finds that in all the cases there was more or less sensory involvement. The order in which the sensory involvement was most frequently observed is summarized as follows:

Touch—upper limb, trunk, lower limb, face. Pain—upper limb, trunk, lower limb, face. Temperature—upper limb, lower limb, trunk, face. The stereognostic sense was disturbed in 29 cases out of 35. In 22 the loss was complete. The greater the involvement of the other sensations the more marked the astereognosis, which he thinks favors the conception of the stereognostic sense as depending on integrity of the three cardinal sensations. Paresthesia was present in only 12 cases. The special senses were involved only in 11. The longer the date of motor paralysis, the less the sensory disturbance. He is forced to the conclusion that hemisensory disturbances probably always accompany motor paralysis of cerebral origin, no matter to what extent the latter is marked; paralytic or even only paretic symptoms will at the same time show sensory symptoms. The method and persistence of investigation will determine this fact.

American Gynecology, New York.

February.

- 62 Study of the Cadaver of a Woman Who Died in the Sixth Month of Pregnancy. J. Clarence Webster.
- 63 The Technic of Vaginal Hysterectomy in Cases of Pelvic Inflammation. William R. Pryor.
- 64 *Hysterectomy in Puerperal Septic Infection. Charles Jewett.
- 65 *Hydroids Tubae Profluens. Henry D. Ingraham.
- 66 *Version or Forceps, Which? S. Marx.

64. Puerperal Sepsis.—In this paper Jewett tabulates all the material that he has been able to obtain in regard to the effects of hysterectomy in childbed sepsis and finds a total of 116 operations. In 4 the result was not stated; of the remaining 112, 59 resulted successfully, that is, 52 per cent. In 34 operations after term labor, there were 17 recoveries, 50 per cent., and in 28 after septic abortion there were 11 recoveries, or 39.2 per cent. In 25 cases in which no extrauterine structures were involved, 19 were saved, 76 per cent. Of 12 patients in whom peritonitis was found at operation, 2 or 16.6 per cent. recovered; in 12 cases where bacteriologic examinations were made, streptococci were found. In 17 cases operated on the first week after delivery, there were 64.7 per cent. of recoveries. Seventeen operations during the second week gave 52.9 per cent. of recoveries. In 54 abdominal hysterectomies there were 27 recoveries, or 50 per cent.; and in 29 vaginal operations there were 14 successful results, 48.3 per cent. In 3 cases of supra-vaginal amputation with extraperitoneal treatment of the stump, all the patients recovered. No instance of recovery appears where there was a clearly-established diffuse peritonitis. The experiences presented justify the conclusion that while hysterectomy is very seldom demanded in the treatment of puerperal septic infection, the operation can not be wholly rejected. In rare instances it is clearly indicated. He gives a table of cases.

65. Hydroids Tubae Profluens.—Two cases are reported by Ingraham, one due to hemorrhage in childbirth, and the other probably too long-continued constipation. In the first case there has not been any relief. In the second, relief of the constipation caused relief of the symptoms, which recurred when the condition of the bowels was neglected.

66. Version or Forceps.—Marx favors the use of version in preference to forceps and would not sanction the application of forceps to the head above the brim, except when rupture of the uterus exists or is impending, or when we are dealing with a tetanized organ from which the waters have long escaped.

Illinois Medical Journal, Springfield.

March.

- 67 The Management of Our Charity Hospitals. Denslow Lewis.
- 68 The Care of the Perineum During Labor and the Puerperium, Based on a Study of 514 Cases. Effa V. Davis.
- 69 *Treatment of Septic Conditions of the Uterus. M. S. Marcy.
- 70 Fracture of the Femur and Its Treatment. W. A. Kuslewski.
- 71 What Cures? B. B. Griffith.
- 72 The Work of the State Board of Health. Warwick A. Shaw.
- 73 The Heart and Life Insurance. J. C. Sullivan.

69. Septic Uterus.—Marcy recommends in a case of actual abortion the leaving alone of the placenta if it is not detached or can not be detached as a whole. Examine the patient at least twice every day as to temperature. If there is a slight rise or if we can not see the patient often, then a clean fountain syringe with a sterilized glass uterine tube attached, pouring in one-half pint of hydrogen dioxide, diluted with one-third

sterile warm water, allowing it to flow while introducing the tube into the uterus to prevent air entering the uterus is recommended. The os must be sufficiently open to allow the free escape of the fluid. There should also be ready a pitcher of hot sterile water in which has been dissolved a few tablets of potassium permanganate with which to continue the douche, repeating this procedure as often as necessary. He claims that this method will be satisfactory, and says it bleaches septic debris in the uterus and renders it odorless and harmless, without doing violence to the uterus itself. In the discussion following the plan was criticised by Dr. C. B. Reed.

Archives of Otology, New Rochelle, N. Y.

February.

- 71 *A Brief History of Bacteriological Examinations in Suppurative Otitis Media, with Remarks upon the Relative Virulence of the Various Micro-organisms. Wendell C. Phillips.
- 73 *The Treatment of Acute Otitis Media. F. Bezold.

74. Otitis Media.—Over twenty different micro-organisms are noted by Phillips as having been observed in otitis media. The most virulent are the streptococci. Next to them he considers the diplococcus intercellularis meningitidis. The pneumococcus is frequently found, but is not to be considered especially virulent. It is probably more frequently present in purulent otitis media than any of the others.

75. Treatment of Acute Otitis Media.—Bezold notices several points in regard to the treatment. He insists on determination of the site of the perforation which, in his experience, was most frequent in the upper and lower posterior quadrants. He has never observed an acute perforation in the Shrapnell membrane. Multiple perforations or a marginal one, indicate tuberculous infection. He comments on the anatomic peculiarities of the pneumatic cells as affecting the duration of the disease. They differ in size and number in different cases. In ordinary tubal occlusion, if the serum is not mechanically removed and brought to absorption by the repeated use of the Politzer bag, he would practice paracentesis in the lower posterior quadrant of the ear-drum, preceding it by mechanical cleansing of the ear and irrigation with a 5 per cent. carbolic solution. The serum which exudes is removed with cotton tips, and if the remainder is not forced into the meatus by the air-bag, he would use an external air douche to force it into the nasopharynx. In ordinary acute otitis media he would operate by paracentesis and use the air douche and inflate a small quantity of boric acid powder. He considers a careful drying of the canal by dipping out the discharge with cotton tips to be very important. If acute middle-ear suppuration lasts more than two months and there are complications present which will prevent its spontaneous cure, he does not hesitate to proceed to operation, especially if pain or swelling are present below the mastoid. He objects particularly to irrigation through the catheter and to the packing of the ear canal, the so-called dry method.

Journal of the Michigan State Medical Society, Detroit.

March.

- 76 *The Sanatorium Treatment of Phthisis Pulmonalis. E. L. Shurly.
- 77 *The Nature and Treatment of Epilepsy. Herman Ostrander.
- 78 *Some Unsettled Points in the Consideration of Typhoid Fever. Homer E. Safford.
- 79 Some Points in the Differential Diagnosis of Cancer of the Stomach. Collins H. Johnston.
- 80 Auto-intoxication as a Cause of Gingivitis. J. C. Maxwell.

76. Tuberculosis.—Shurly advocates the sanatorium treatment of tuberculosis in some advanced cases, though the home treatment he considers is preferable, especially with salubrious environments, for children and young adolescents, as also among the educated well-to-do class of people during the early stages of chronic pulmonary disease. When septic poisoning has occurred, however, greater relief may be expected from sanatorium life and discipline. He thinks it would be well for general hospitals to have an annex properly built for the accommodation of these cases. He deprecates the panicky feeling about its contagion and thinks that possibly the prevalence of the disease is overestimated.

77. Epilepsy.—Ostrander holds that the prevalence of epilepsy may be diminished by greater attention on the part of physicians to the remote causes, especially the nutrition of children

in early life, which he thinks has much to do with the degeneration of their nervous system and in the production of later epilepsy. He also objects to the use of nerve sedatives or powerful drugs to prevent or abort convulsions. It is not always advisable to do this. The proper treatment may be summed up as régime and discipline, and since these can not always be controlled at home the colony treatment is the ideal one for a large class of these unfortunates.

78. Typhoid Fever.—Safford reviews certain points in typhoid fever, the diet which he finds of late years has come to be more liberal, at least according to the recommendation of certain authorities. As regards the baths, he thinks the opponents and adherents of the Brand method are compromising on the tepid bath, though in cases of hyperæmia the case may be a little different. The mere lowering of temperature, however, is not considered as important as formerly. Intestinal antiseptics is also mentioned. He thinks in using means for this, we should take special care as to the condition of the kidneys. The various reactions, the diazo and Vidal reactions are noticed. The former may be of value in the diagnosis and prognosis. Its late appearance and persistence would indicate acute tuberculosis. The reappearance of the reaction after its disappearance for a time may help to determine the question of relapse as distinguished from the fever of complications. Its occurrence in other diseases, of course, is not to be forgotten, and is responsible for the neglect into which it has fallen. The Vidal reaction is less questioned of late, but still it is not absolutely reliable, and often appears but late. If its limitations are recognized it may be used with advantage. In conclusion he calls attention to the elimination of bacteria through the urine as a possible cause of the continued danger of infection, and the question of typhomalarial fever, which he holds does not exist.

Dominion Medical Monthly, Toronto.

March.

- 81 *The Identity of Human and Avian Diphtheria. F. C. Harrison.
- 82 Report of a Case of Acute Leukæmia. W. B. Thistle.
- 83 A Case of Hemorrhage from Stomach and Bowels Complicating Chronic Bright's Disease. W. T. Gemmell.

81. Non-Identity of Human and Avian Diphtheria.—After first noticing the experimental work of others, Harrison gives his own experiments, in which he inoculated fowls suffering from roup with diphtheria antitoxin without effect, and also healthy fowls with cultures of the Klebs-Loeffler bacillus, which were similarly ineffective. He also finds that he did not infect rabbits and guinea-pigs with false membrane taken from birds, and he has kept rabbits and guinea-pigs in cages with diseased hens and they have never taken the disease. He also finds that the structure of diphtheria membrane in man and fowl is quite different. In the former it consists of necrosed epithelial cells and inflammation of underlying connective tissue with abundant fibrous exudation. In fowls, however, it is entirely composed of pus cells, some small masses, and debris of epithelial cells and bacteria; micro-organisms which stain by the Gram method were seldom found. Attempts were made to increase the virulence of the hen diphtheria micro-organism, which he calls the *Bacillus cacosmus*, with success, producing roup in the hen at pleasure by inoculation from roup pigeons. He finds also that the same disease can be produced in healthy hens by the use of the *Bacillus pyocyaneus*.

Alabama Medical Journal, Birmingham.

March.

- 84 Annual Report of County Health Officer. J. M. Mason.
- 85 Puerperal Infection. T. A. Casey.
- 86 *The Heroin Habit Another Curse. Geo. E. Pettey.
- 87 Dr. W. E. B. Davis, as a Man, as a Citizen, as a Physician, as a Surgeon, and as a Friend. R. M. Cunningham.
- 88 *Coughs and Their Treatment. Alex. De Soto and C. W. Crimpton.
- 89 The Modern Hospital. J. H. Phillips.

86. The Heroin Habit.—The published statements that heroin does not cause the habit of using it are contradicted by Pettey, who reports cases of heroin addiction. Out of the last series of 150 drug-habit cases coming under his care, 8 had been addicted to the use of heroin, 3 were initial habits, the patients not having been before addicted to any drug. He finds the same difficulty in breaking off the habit that we have in

morphin. In his experience, it differs from morphin in having less of the primary stimulating effect, being more prompt and certain as a hypnotic, and less powerful and prompt as a pain reliever. It does not so greatly impair digestion or assimilation or interfere with secretion and excretion, but it does cause constipation and interfere to a hurtful degree with the nutritive function, and its prolonged administration is liable to produce the opium habit.

88.—This article has appeared elsewhere. See THE JOURNAL of February 14, title 41, p. 470.

American Practitioner and News, Louisville.

December 15, 1902.

- 90 The Most Practical Organization for the Medical Department of the United States Army in Active Service. (Concluded.) Thomas P. Grant.
- 91 Psychology as an Adjunct in the Treatment of Disease. L. J. Jones.
- 92 Causes of Blindness in Kentucky: From a Study of the Eyes of the Pupils of the Kentucky Institution for the Education of the Blind. W. O. Bailey.

Medical Standard, Chicago.

March.

- 93 Three Cases of Hip Disease Illustrating Different Stages. John L. Porter.
- 94 The X-Ray in the Treatment of Deeply Located Malignant Growths. Clarence E. Skinner.
- 95 Commoner Diseases of the Eye. C. A. Wood & T. A. Woodruff.
- 96 Active Principles of Plants. Albert D. Thorburn.
- 97 Practical Dietetics. A. L. Benedict.
- 98 Pain and Its Indications. E. C. Hill.

Northwestern Lancet, Minneapolis.

March 1.

- 99 Switzerland as a Medical Center. G. R. Curran.
- 100 Influenza and Its Relation to Motor Paralysis. H. K. Read.
- 101 Tuberculosis. H. M. Bracken.

March 15.

- 102 Retropharyngeal Abscess in Infants, with Report of Cases. W. T. Adams.
- 103 Retropharyngeal Abscess—Two Cases. Edward J. Brown.
- 104 Treatment of Typhoid Fever. H. L. Staples.
- 105 The Symptoms of Acute Miliary Tuberculosis of the Lungs, with Report of a Case. Geo. Douglas Head.

Atlanta Journal-Record of Medicine.

March.

- 106 Physical Training in the Public Schools of Atlanta. Theodore Toepel.
- 107 The Mechanics of Mercury in Syphilis. Thomas W. Murrell.
- 108 Observations on Tertian and Quotidian Malarial Fevers. S. D. Kolozsvary.
- 109 Chloroform as a Surgical Anesthetic, and Its Administration. F. Manfred Call.
- 110 A Brief Study of Flat-Foot. Michael Hoke.

Chicago Medical Recorder.

March 15.

- 111 The Illegitimate Child in Chicago. Hastings H. Hart.
- 112 A System for the Surgical Treatment of Hare-Lip and Cleft Palate. Geo. V. L. Brown.
- 113 The Tuning Fork and Stethoscope in the Diagnosis of Fractures. Albert H. Andrews.
- 114 Notes on Three Hundred Consecutive Anesthesias. D. H. Galloway.
- 115 An Interesting Case of Syphilis. Max Reichmann.

Denver Medical Times.

March.

- 116 Alkaloids in the Treatment of Fevers. S. B. Miller.
- 117 The New Surgical Treatment for Glaucoma. Henry LaMotte.
- 118 Removal of the Superior Cervical Sympathetic Ganglion for Glaucoma, with Report of a Case. A. A. Kerr.
- 119 Operation for Chronic Osteomyelitis in a patient with a Constitutional Dyscrasia. E. S. Wright.
- 120 A Case of Delayed Eruption of Syphilis, Following Abortion and Resembling Smallpox. Geo. A. Moleen.

New York State Journal of Medicine, New York City.

March.

- 121 Hernia. S. W. S. Toms.
- 122 Proprietary Remedies. N. B. Bayley.
- 123 On Unscientific and Careless Prescribing, Secret and Proprietary Remedies. Harry R. Purdy.
- 124 New Devices for the Treatment of Stricture of the Esophagus. Theodore Dunham.
- 125 Treatment of Pneumonia. J. W. Grosvenor.

Oklahoma Medical News-Journal, Oklahoma City.

March.

- 126 Three Cases of Congenital Single (Unsymmetrical) Kidney, with Remarks. Ramon Guiteras.
- 127 Acute Appendicitis and Its Treatment. (Concluded.) John B. Deaver.
- 128 Plastic Surgery in Ophthalmology. Flavel B. Tiffany.
- 129 Report of Extrauterine Pregnancy—Two Cases of Appendicitis—Pregnancy Complicating Cyst. G. C. Perdue.
- 130 Malarial Fever. L. W. Palmer.

St. Louis Courier of Medicine.

March.

- 131 Pelvic Tumors Complicating Parturition. Henry Schwarz.
- 132 Typhoid Fever vs. General Miliary Tuberculosis. E. W. Can-nady.
- 133 Hypodermatic Injections of Quinain in Malaria. John A. Collins.
- 134 Severe Headache and Other Nervous Symptoms Relieved by Correcting an Error of Refra World.
- 135 Hematemesis in the Newly-Born ge M. Tuttle.
- 136 Preventive Medicine. (To be continued.) B. F. Hart.

Medical Summary, Philadelphia.

March.

- 137 The Physician's Whole Duty in Cases of Appendicitis. J. R. Clemens.
- 138 The Morphin Habit as a Psychic Disease. C. E. Patterson.
- 139 Disease and Old Age. J. L. Wolfe.
- 140 A Collection of Driftwood from the River of Time. Wm. Hooker Vail.
- 141 Masturbation. J. A. Burnett.
- 142 Hour-Glass Contractions with Adherent Placenta. S. S. Turner.
- 143 Compound Fracture of the Bones of the Hand and Foot. Thomas H. Manley.

Medical Bulletin, Philadelphia.

March.

- 144 Locomotor Ataxia. John V. Shoemaker.
- 145 Some Thoughts on Iron Therapeutics. J. C. Hill.
- 146 Report of Four Cases of Typhoid Fever Treated with Aceto-zone. Joseph V. Antill.
- 147 Renal Dropsy. S. C. Reisman.
- 148 Migraine Tablet Poisoning: A Medical Matter. John A. Cutter and Dallas Flanagan.

Medical Mirror, St. Louis.

March.

- 149 The Proposed Surgery of Bright's Disease. Jacob Block.

Texas Medical Journal, Austin.

March.

- 150 Infectious Endometritis. J. W. Kennedy.
- 151 Remarks on the Tractus Intestinalis. Byron Robinson.
- 152 Puerperal Eclampsia. E. B. Parsons.
- 153 Delayed Union of Fractures, with Report of Three Cases. J. C. Andrews.
- 154 Sterility in the Female and Its Curability. S. L. Kistler.

Medical and Surgical Monitor, Indianapolis.

March 15.

- 155 Foul Breath. John F. Barnhill.
- 156 Some Elements to be Considered in Urinalysis—Phenomena of the Secretion and Excretion—Sediments, Their Tests and Method of Identification. (To be continued.) J. W. Crismond.
- 157 Puerperal Eclampsia and Its Treatment. I. B. Washburn.
- 158 Old Things Become New. G. W. H. Kemper.

Virginia Medical Semi-Monthly, Richmond.

March 13.

- 159 Cornual Pregnancy, with Report of a Case. Stuart McGuire.
- 160 The X-Ray Treatment of Cancer: Report of Cases. Thomas A. Groover.
- 161 Some Theories as to the Causation of Cancer. Greer Baughman.
- 162 Diagnosis of Cutaneous Cancers. F. H. Beadles.
- 163 X-Rays in the Treatment of Superficial Cancers. Alfred L. Gray.
- 164 Case of Leukemia—A Clinical Lecture. William Osler.
- 165 Pulmonary Tuberculosis—Means of Early Diagnosis—Treatment. O. F. Blankingship.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

March 14.

- 1 *The Diagnosis of Pulmonary Tuberculosis. C. Theodore Williams.
- 2 *The Nature of the Infectivity of Phthisis: A Study of the Views of Koch, Flugge and Others. Alfred Hillier.
- 3 *Human and Bovine Tuberculosis: The Possibility of Human Infection from Cattle. Nathan Raw.
- 4 *Phthisis and House Infection. J. R. Johnson.
- 5 *The Dietetic Treatment of Pulmonary Tuberculosis from the Point of View of Its Hematology and Histopathology. J. J. Galbraith.
- 6 *The Sanatorium Treatment of Pulmonary Tuberculosis, with Especial Reference to Nordrach Methods. Peverell S. Hichens.
- 7 Sanatoria Plus Homes for Consumption. W. Rushton Parker.

1. Tuberculosis.—Williams first notices the pathology and calls attention to the defenses of the air passages to protect the lungs, the tonsils, larynx, nose, especially the trachea, and to a certain extent the primary bronchi. The last two have three layers of epithelium which have to be penetrated, the top

one armed with cilia, producing a strong current outwards, thus preventing the tubercle bacilli from descending. The amount of germs that must be inhaled is very great, and yet we note that comparatively few of those who inhale them suffer from pulmonary tuberculosis. He notes in this connection the well-known experience at the Brompton Hospital. The chief causes of tuberculosis, however, are two: 1. Impure air; 2, lack of proper food. Frequently deprivation or starvation is the starting point of a tuberculous infection. He gives a striking instance of this in a man who had his esophagus injured by sulphuric acid, embarrassing swallowing. When death occurred, as it did shortly, his lungs were found filled with tubercles. Special conditions that favor tuberculosis are noticed, such as ossification of ribs, noted by Freund, and pleurisy. Why the apices are first involved is probably due to a certain amount of obstruction and stagnation in the upper lobes. The first place where a tubercle lesion is likely to be found is near the upper lobe about one and a half inches below the posterior apex in the supracapular region. Thence it spreads by continuity, by the lymph, by the circulation (which is the most serious and rapid method and the one which occurs when the meninges are infected) and lastly by re-inhalation of sputum. The points of diagnosis are mentioned, history, physical signs, sputum examination, diagnosis of pneumonia and of bronchitis, which in cases of catarrhal infections is sometimes difficult. As regards typhoid fever, this has more bearing in acute tuberculosis than on the ordinary form.

2. The Infectivity of Phthisis.—Hillier notices the different methods of the infectivity of phthisis, the chief one being the inhalation of sputum, and offers the following conclusions from the evidence he has adduced:

I hold it conclusively established that both dried tuberculous sputum dust and the minute drops coughed out by the consumptive are capable of conveying the infection. The precise proportion which each factor plays in this infection it is difficult to estimate, but there are two points in connection with the cough infection which, I think, are of special importance.

In the first place, the minute cough-sprayed drop which contains a tubercle bacillus probably in the majority of instances contains that bacillus in a condition of a high degree of virulence. The bacillus contained in the minute sprayed drop comes straight from its natural soil, and is probably more potent as an agent of infection than that contained in the dust particle which has been exposed to desiccation, and in the majority of instances to some degree of light.

Secondly, those sprayed drops which fall to the ground, or are deposited elsewhere, although they may not carry with them a large number of bacilli, nevertheless deposit such bacilli as they do carry, under conditions which ensure their rapid desiccation and formation into the smallest particles of dust. These minute drops thus add their quota of bacilli to that quantity of minute dust which alone is capable of inhalation.

With reference to the extent of the infectivity of phthisis, while I hold it to be an infective disease, I do not consider that the degree of this infectivity is a high one. But as against this we must set the fact that phthisis is a chronic disease, and that the chance of conveying the disease often extends over years.

Of those exposed to infection for brief periods only a very small minority are infected. Of those exposed for days, weeks, even months in a small confined atmosphere many escape. Why many escape and others do not escape, has not yet been scientifically demonstrated. But this we know, that be the causes of apparent immunity what they may, no person can develop tuberculosis who is not exposed to the possibility of invasion by the tubercle bacillus.

3. Human and Bovine Tuberculosis.—We have already given Raw's views in THE JOURNAL of February 28, 1902, p. 609.

4. Phthisis and House Infection.—Johnson analyzes a number of cases of tuberculosis occurring in old houses in Richmond. He finds, out of 11, 6 arose in old ill-ventilated, narrow-windowed, sunless or dusty houses; 2 arose in houses known to be tenanted by persons suffering from phthisis; 2 were imported cases living in old houses in which the disease was rapidly accelerated; one is an imported case residing in a modern house. In not a single instance does the disease arise *de novo* in modern, decently-kept houses. It is bad building and bad management that make tuberculous houses. The modern, well-cleaned house, he says, offers no risks whatever.

5. Diet in Tuberculosis.—Tuberculosis is characterized by generally widespread toxic changes. The tissues in this condition are not capable of elaborating food stuffs satisfactorily. One advantage of the meat diet in addition to its directly curative effect is that it supplies organically combined iron and renders the administration of other organic hemetics unnecessary. A rational dietary in phthisis is not indiscriminate stuffing nor

indiscriminate lessening of food, but consists in furnishing a diet rich in the proper constituents. The special advantages of a meat diet in this relation is that, besides containing the nuclear bodies which have a directly stimulative action, it contains also proteids which have a high nutrient value. Sufficient fat and carbohydrates should be given to meet the physiologic needs and should be increased as metabolism and absorption improve, to the maximum which can be elaborated.

6. Sanatorium Treatment.—The Nordrach method is here discussed by Hiehens, who claims that it is the duty of the practitioner to cultivate his observations and diagnostic skill so as to recognize the earliest signs of tuberculosis and as soon as diagnosis is made put the patient on the most thorough open-air treatment that his circumstances will allow. If the patient is poor much can be done at home, keeping his windows wide open day and night, and being under an open shelter or in a chair in the garden with a sufficient and nourishing diet. If well-to-do the patients should be sent, if possible, to a sanatorium and the best plan would be to have one in the climate in which they have permanently to live. Even in the slightest cases a very long period should be devoted to treatment and rest from work. Even after an apparent cure there are many tubercular foci which are apt to be left. If more time can not be given even one or two months at a sanatorium will be a training, and after leaving the patient should live an open-air life for one or two years. If poor one must do the best we can for them by allowing them to take up some light occupation out of doors.

The Lancet, London.

March 14.

- 8 Some Points in the Anatomy and Pathology of the Vermiform Appendix. W. McAdam Eccles.
- 9 The Nature and Anatomy of Enteroptosis (Glenard's Disease). Arthur Keith.
- 10 *On the Problem of Glycosuria and Diabetes. W. Hale White.
- 11 *The Use of Salicylic Acid as a Preservative in Food. C. J. MacAlister and T. R. Bradshaw.
- 12 *Concerning Anti-streptococcal Serum and Its Use in Malignant Endocarditis. Cyril Ogle.
- 13 How to Prevent the Spread of Pellagra in Egypt. F. M. Sandwith.
- 14 *The Etiology of Sleeping Sickness. Aldo Castellani.
- 15 On Prolapsus Uteri, with Special Reference to an Operation for Reproduction of the Sacro-uterine Ligaments. E. Stanmore Bishop.

10. The Problems of Diabetes.—White notices a number of things which are required to complete our knowledge in regard to glycosuria and diabetes: 1. We must have some better methods of recognition of dextrose in the urine as easy as small amounts of albumin are discovered. We want to know something more about glyconic acid and whether people that pass it later become glycosuric; the connection of exophthalmic goiter with glycosuria is another question. We want information about the occurrence of other sugars than dextrose in the urine. Very few if any observations have been made in England on pentosuria and the question is asked whether the passing of lactose in the urine may lead to diabetes or not. The more accurate use of the term diabetes is noted as desirable. We need to find out whether alimentary cases of glycosuria become real diabetes mellitus, and the fact that many diabetics can utilize levulose much better than dextrose is of interest. The question arises whether other sugars might not be utilized in this disease. Another point mentioned by White is the extraordinary fact that patients put on a strictly carbohydrate-free diet may, if a little carbohydrate is given, excrete far more sugar than has been given. We also want an explanation why sugar disappears when coma comes on and also why the body fails to utilize dextrose when it has not lost the general power to oxidize. Coma is a matter of great importance. There is considerable evidence that it is closely associated with oxybutyric acid, which is always abundantly present and the fact that coma is sometimes benefited by giving alkalis is suggestive of this. The origin of oxybutyric acid is also of interest. There are no special anatomic changes in the nerve centers or in the peripheral nervous system with diabetes, but the fact that the knee jerk is absent in 50 per cent. of diabetics is difficult to explain. As regards treatment, the author thinks that in many instances the dieting has been too strict. Many cases are not allowed enough fat, and he

thinks that the use of a large amount of alkali is excellent in the treatment of coma.

11. Salicylic Acid and Food Preservatives.—MacAlister and Bradshaw have experimented on the effect of salicylic acid in food stuffs and find that it exerts about the same retarding influence on digestive processes as does kitchen salt. Its effect on nutrition can not be very well elucidated by laboratory experiments. The only practical method was to take it themselves and give it to others. One of them took a dose of five grains of the pure acid every day for a month without any ill-health following, and a smaller quantity given to children every day with their dinners did them no harm. It is a curious fact that insects do not appear to be harmed by taking salicylic acid dissolved to saturation in syrup. Kolbe, quoted by Binz, while directing attention to the strong antiseptic properties of the drug, says it is not poisonous to human beings and in proof of this took himself and gave to others from 1 to 1.5 grams a day and in some cases for nine months together without apparent injury. The objection that it is injurious to the mucous membrane on account of its acid quality alone can not be maintained. The argument is fallacious that any substance which has a deleterious action on one kind of protoplasm must act deleteriously on all kinds. Some micro-organisms require oxygen while others are killed by it. While the harmfulness or not of antiseptics is a matter of disagreement, authorities are agreed as to the harmfulness of food in decomposition, and we may be courting a greater evil by barring their use. They maintain that the use of salicylic acid enables the manufacturer to place on the market, wholesome, agreeable and inexpensive articles of food for persons who can not afford the more costly luxuries and which take the place of intoxicating drinks. They say this with due consideration and with, they trust, an adequate sense of responsibility.

12. Anti-Streptococcal Serum in Endocarditis.—From a study of the effects of antistreptococcal serum in endocarditis including two tabulated statements of organisms present before and after the use of the serum, Ogle says, that if any conclusion can be drawn, perhaps they will be:

1. That the gravest symptoms combined with streptococcal infection, even of the blood stream, are not incompatible with recovery if treated by injections of anti-streptococcal serum.
2. That this is true also in malignant endocarditis, but that here the chances are probably less favorable on account of the colony of micrococci involved in the vegetations in constant contact with the blood stream.
3. That in malignant endocarditis staphylococci are frequent, or a mixed infection of staphylococci and streptococci.
4. That if an examination of the blood be negative it would be prudent, therefore, to use injections of anti-staphylococcal, together with anti-streptococcal serum.

14. The Etiology of Sleeping Sickness.—Castellani finds an organism in this disorder in the blood and the cerebrospinal fluid which he thinks a new variety of streptococci. While the streptococci are hard to differentiate, the cultivation on gelatin he thinks is sufficient to differentiate it from all others.

Australasian Medical Gazette, Sydney.

February 20.

- 16 Insanity in Its Relation to the Practitioner, the Patient, and the State. W. Beattie-Smith.
- 17 Typhoid in Hobart and Melbourne and the Influence of Drainage on Its Prevalence. James Jamieson.
- 18 The Spread of Typhoid Fever. Duncan Turner.
- 19 Pathogenesis and Prophylaxis of Typhoid Fever and Observations on Malaria in Northwest Australia. T. B. Belgrave.
- 20 Two Gynecological Cases. W. Throsby.
- 21 A Peculiar Bullet Wound. H. Cox.

Centralblatt f. Innere Medicin, Leipsic.

- 22 (XXIV, 1.) *Ueber das Zusammentreffen (coincidence) von Oxalurie und Indikanurie. W. von Green Plant.
- 23 *Ueber das Vorkommen von grünen Schimmelpilzen (Fungi) im Magen und deren diagnostische Bedeutung. H. Schlesinger.
- 24 (No. 2.) *Zur Diagnose multipler Darm- (intestines) Stenosen. H. Schlesinger.
- 25 Rückenmarks und Wurzel-Metameren (of spinal cord and roots) bei der Syringomyelie. L. Ferrannini.
- 26 (No. 3.) Zur Frage der Entgiftung (neutralization) von Strychnin. S. J. Meltzer and G. Langmann (New York). Experimental. Negative.
- 27 *Ueber syphilitische Beckenzellgewebsentzündung (inflammation of pelvic cellular tissue). M. Loeb.
- 28 (No. 4.) *Bemerkungen über Stauungsblutungen (extravasation from congestion), insbesondere infolge eines epileptischen Anfalles. K. Pichler.
- 29 (No. 5.) *Klinisches Phosphormeter. A. Jolles.

- 30 (No. 6.) *Ueber hereditäre, kongenitale Herzleiden (heart affections). L. Ferrannini.
- 31 (No. 7.) *Zur Diagnostik des Sanduhrmagens (hour-glass stomach). G. Rosenfeld.
- 32 *Zur Lehre vom miltigen (milky) Ascites. T. Christen.
- 33 (No. 8.) *Die Ether-Glykosurie und ihre Beeinflussung (and influence on it of) intravenöse Sauerstoff- (oxygen) Infusionen. A. Seelig.

22. Coincidence of Oxaluria and Indicanuria.—Moraczewski, at Carlsbad, has examined 439 persons to determine the frequency of this coincidence. He found that oxaluria accompanied indicanuria in 84.3 per cent. of the 376 cases in which the latter was noted, and in 100 per cent. of the 23 cases in which the indicanuria was extremely pronounced. Indicanuria was present in 74.2 per cent. of the 398 cases with evident oxaluria. In only 15 per cent. of the total number was oxaluria found without indican, while they coincided in 84 per cent. In only 10 per cent. was indican noted without oxaluria. The subjects were those with uric acid diathesis or oxaluria *sui generis*; or diabetics, the latter representing 23 per cent. of the total number. The digestion was apparently excellent in the majority. Altering the diet and administering alkalis modified both in the same proportion. The diet proposed by Rosin for oxaluria avoids spinach, cabbage, milk, eggs, tea and cocoa. Acid reaction is obtained with meat. This is supplemented by small doses of magnesia and copious drinking.

24. Diagnosis of Multiple Stenosis of Intestines.—Schlesinger reports the successful diagnosis of 4 cases of this condition. It was based on the repeated observation of the abrupt, visible erection of certain loops of intestines at a distance from each other, with no palpable rigid intestine between. The assumption of multiple stenosis is confirmed by the recurrence of these "huge snail shells pushing out the abdominal integument," at about the same place each time. Also by the subsidence of a protruding loop with borborygmi and rumbling noises. A history of syphilis or tuberculosis is an aid to the diagnosis. One of his patients had a stricture at twelve points, but recovered after "exclusion"—*Ausschaltung*—of 6.5 feet of the small intestine.

25. Metameres in Syringomyelia.—Ferrannini establishes by the findings in 2 cases which he describes that the sensory disturbances are of a type corresponding to the spinal cord or the roots according as the lesions are situated in the former or in the latter.

27. Differentiation of Inflammation of Pelvic Cellular Tissue.—Loeb reports a case diagnosed as an inoperable sarcoma which proved at the autopsy to be syphilitic gummata of the liver. Lancereaux has reported another of stenosis of the rectum in an anemic woman of 36, from compression by a mass adherent to the pelvic wall, assumed to be of malignant nature. There were no traces or history of syphilis, but the patient entirely recovered under potassium iodid, 3 gm. daily for two months.

28. Extravasation from Congestion.—A supposedly healthy young man awoke from an afternoon nap finding himself on the floor instead of the bed, and with his face, mouth and neck somewhat swollen and dotted with punctate hemorrhages, down to a red line around his neck. He had also urinated. The physician diagnosed the case as a first attack of epilepsy occurring during sleep, the congestion and swelling of the head aggravated by the neckband of his undershirt, loose under ordinary conditions.

29. Phosphometer.—Jolles has improved and simplified his apparatus for detecting phosphorus and phosphoric acid in the blood. The description is illustrated.

30. Hereditary Heart Affections.—Ferrannini remarks that in the history of certain families general dyscrasias, nervous affections, nutritional disorders, cardiac defects and vascular and morphologic anomalies appear before us as in a kaleidoscope, recurring in various combinations. He gives the history of one family for three generations, including 42 individuals. In 31 per cent. there was some cardiac affection, and only 7 per cent. were healthy. He attributes the inheritance of heart disease to an embryologic substratum in inherited insufficiency of the histogenetic power of the mesenchyma.

31. Diagnosis of Hourglass Stomach.—The usual signs of this condition may be lacking and yet it is possible to differentiate

it as shown by the case described by Rosenfeld. The patient was a pale, thin man of 28. Functional tests showed HCl in abundance, but otherwise nothing abnormal in the stomach. There was no palpable constriction and the fluid contents of the stomach could be siphoned out with a soft sound. Radioscopy disclosed that the spiral metal sound rested in the usual curved line along the bottom of the stomach, but below it there was evidently a cavity, 8 cm. in height, casting a lighter shadow, and at its base could be seen the familiar lake of fluid contents. The sound could not be pushed down into this cavity until a soft sound was substituted. The history of the noises in the stomach during digestion and the occasional cramps harmonized with the assumption of hourglass stomach. The autopsy showed a marked constriction by a fibrous band, which filled up the groove it made.

32. Milky Ascites.—The milkiness can not be ascribed to lecithin as this may be found in the clear fluid as well, Christen finds, contrary to what some have asserted.

33. Influence of Oxygen in Ether-Glycosuria.—Seelig announces that in his tests on dogs, ether invariably induced glycosuria during the inhalation and also for three or four hours afterward. The proportion was 8 to 10 per cent. in the more vigorous animals. He also found that with the simultaneous intravenous infusion of oxygen, there was no glycosuria. He is now studying this interesting fact to determine whether the same measure will abolish or prevent glycosuria from other causes.

Deutsche Med. Wochenschrift, Berlin and Leipsic.

- 34 (XXIX, 7.) Ueber die Priorität der Entdeckung (discovery) des Ruhr- (dysentery) Bacillus und der Serumtherapie bei der Dysenterie. K. Shiga.
- 35 *Tardy Brain Affections After Injuries of Skull. E. Stadelmann.—Ueber Späterkrankungen des Gehirns nach Schädeltraumen. (Commenced in No. 6.)
- 36 Ueber eine Stomach-Epidemie während des südafrikanischen Krieges (during campaign in Southern Africa). J. C. J. de Haan.
- 37 Ueber einen weiteren Fall von Nebenwirkung des (by-effects of) Aspirins. Otto Meyer.
- 38 Eine neue automatische Spritze (syringe) für Infiltrations-Anästhesie und andere Zwecke. A. Strauss.
- 39 Shall the General Practitioner Get a Roentgen Apparatus? Discussion.
- 40 (No. 8.) Caustic Action of Soft Soap. A. Most.—Ueber Schmelzseifenverätzung.
- 41 Ueber einen neuen Apparat für die Nachbehandlung der angeborenen Hüft- (for after-treatment of congen. hip-joint) Luxation. L. Heusner (Barmen).
- 42 *Experimentelles über subconjunctivale Injectionen. K. Wesely.
- 43 Are Boric Acid and Borax without Effect or Danger for the Organism? E. Rost.—Sind Borsäure und Borax wirkungs- und gefahrlos für den Organismus? (Commenced in No. 7.)
- 44 Medicinische Mittheilungen aus unseren westafrikanischen Kolonien. E. Joseph.
- 45 Campaign Against Charlatans.—Ein Wort zur Bekämpfung des Kurpfuschertums.
- 46 History of the "Sweat Cure." W. Cohn.—Zur Geschichte der Schwitzkur.
- 47 (No. 9.) *Weiterer Beitrag zur Ursache (cause) und spezifische Heilung des Heufiebers (hay fever). Dunbar.
- 48 *Zur Physiologie der Ernährung (nutrition) des Foetus. J. Veit.
- 49 Beitrag zur konservativ-operativen Behandlung der veralteten (old) Inversio uteri puerperalis. A. Schulze-Vellinghausen.
- 50 *Ueber die diagnostische Verwerthung (utilization) des Alttuberkulins bei der Keratitis parenchymatosa. Enslin. (Commenced in No. 8.)
- 51 *Ueber Myosarkom des Magens (of stomach). Moser. (Commenced in No. 8.)
- 52 Gravidität und Nephritis. Heinrich. Four cases.
- 53 Ueber die Anwendung der Schultze'schen Schwingungen (swinging) bei Bronchilitis und katarrhalischer Pneumonie junger Kinder (in young children). C. S. Engel.
- 54 Ein Nasen- (nose) Speculum mit Vorrichtung für die sterile Tamponade der Nase. L. Neufeld.
- 55 (No. 10.) Ueber eine Methode zur Untersuchung des lebenden Knochenmarks von Thieren (investigation of living marrow in animals) und über das Bewegungsvermögen (capacity for movement) der Myelocyten. A. Wolff.
- 56 Untersuchungen über den menschlichen Schweiß (human sweat). L. Brieger and G. Düsselhorst. Cryoscopy.
- 57 Zur Chemie der Sauerstoff- (oxygen) Chloroform-Narkose. Roth.
- 58 *Proposal for Complete Reform in Dressing Infants. K. Assmus (Kiel).—Ein Vorschlag zu einer vollständigen Reform der Erstlings-Bekleidung und Wasche auf hygienischer Grundlage.
- 59 Occurrence of Tetanus Bacillus Outside of Point of Infection in Man. O. Hohlbeck.—Das Vorkommen des T-Bacillus ausserhalb des Bereiches der Infektionsstelle beim Menschen.
- 60 *Zur Frage der Antitoxin-Behandlung bei Tetanus. Von Schuckmann.
- 61 Ibid. R. A. Frotcher.

62 Agurin. M. Lewitt.

63 Der Zeichenunterricht der Schule (drawing in schools) und sein Werth für den Arzt (value for the physician). Beitrag zur Schulreformfrage.

35. Tardy Brain Affections After Injuries of Skull.—Stadelmann relates the details of several cases to emphasize the necessity of long oversight of patients who have suffered some traumatism affecting the head. Exertion of all kinds and the resumption of the occupation should be forbidden. He now makes a practice of keeping such patients in bed for four weeks after any concussion of the brain, and not dismissing them from medical supervision until six weeks have elapsed. In one of the cases he reports the slight fracture of the skull healed with only an insignificant inflammation and circumscribed adhesion of the dura to the bone, and yet seven weeks after the accident symptoms of meningitis developed, proving rapidly fatal. The subject had been able to continue at work during the interim, after the first few days. The meningitis was caused by the pneumo- and staphylococcus. In another case a man received a severe blow on the right parietal lobe, felling him unconscious. He quickly recovered, and was apparently quite well, with no injury to the bone, for four weeks, when he developed typical Jacksonian epilepsy. The autopsy showed disturbances in the circulation at the point of the injury and directly opposite, with softening of the brain tissue and serious hemorrhage later.

42. Subconjunctival Injections.—Wessely describes the effect of subconjunctival injections as a local revulsion. They have a reflex action on the vessels inducing hyperemia and its consequences, and attract the protecting substances in the serum to the eye. They are, therefore, important aids in torpid processes, but are directly injurious in acute inflammatory lesions.

47. Cause and Specific Treatment of Hay Fever.—Dunbar is the American-German in charge of the Institute of Hygiene at Hamburg. He announces that the specific causal agent of hay fever is the pollen of certain grains which affects the predisposed while harmless for other persons. He has succeeded in reproducing the disease in winter by subcutaneous injection of a minute amount of the toxic substance in the pollen. This toxic substance is not the ethereal oily constituents of the grain, but seems to be an albuminoid body contained in the starch particles. He describes the intense typical attack induced by this procedure in hay fever patients in midwinter while the control subjects did not manifest the slightest reaction to it. He then attempted to produce an antitoxin by inoculating animals with the pollen toxin. For several months the serum of the animals not only failed to neutralize the toxin *in vitro*, but aggravated the symptoms when injected into hay fever patients. But gradually the serum acquired antitoxic power. In the course of his tests he had inoculated 8 hay fever patients in January by instilling into one eye ground corn pollen grains in a centrifugalized aqueous suspension. In every case, without exception, the subjective and objective symptoms of hay fever were produced in varying intensity, while none of the 11 control subjects displayed the slightest objective reaction, even on repetition of the dose and with twenty times the concentration and amount. In the tests of the new serum he instilled into the other eye of the same hay fever patients, the same amount of pollen toxin as before, but mixed with

48. Physiology of Nutrition of Fetus.—Veit argues to prove that the fetus is nourished by the albuminoid substances in the maternal serum. A syncytiolysin is formed as a side chain of the erythrocytes and a hemolysin as a side chain of the chorionic epithelium. In this way hemoglobin is liberated from the erythrocytes and protoplasm from the deported chorionic villi. The dissolved albuminoid substances flow slowly toward the fetal circulation in the maternal blood, but those substances which are precipitated by the fetal serum do not enter the fetal circulation, and those which are precipitated by the maternal serum do not enter the maternal circulation. The fetus is nourished, therefore, by taking up the albuminoids circulating dissolved in the maternal blood, while the deported chorionic villi are dissolved in the maternal serum. The albuminoids derived originally from the fetus may return to it for its nourishment in this way. This balance may be disturbed by exaggerated deportation of villi which entails exaggerated hemolysis, hemoglobinuria, albuminuria, and weaker syncytiolysis, or by the reverse condition, insufficient deportation of villi. In the latter case the maternal organism does not suffer so much, but the nourishment of the fetus is, perhaps, not so good. The anatomy of the pregnant uterus is, therefore, the key to the question whether there is a defective "Anlage," inflammation, or any cause that may induce an exaggeration or insufficiency of the normal deportation of villi. He appeals for further research in this line, and urges that broad points of view should be adopted and trivial contradictions between the results of single investigators should be overlooked in the search for the underlying principles.

50. Diagnostic Value of Tuberculin in Keratitis Parenchymatosa.—Enslin remarks that in an already inflamed eye we can not expect a decisive local reaction to an injection of tuberculin. The characteristic of the general reaction to Old Tuberculin in case of a tuberculous affection is the steep rise and steep decline of the temperature, which commences to be apparent in ten to twelve hours after the injection. This reaction was marked in all his cases in which the keratitis was of tuberculous origin, whether accompanied by lues or not, but it did not occur in any case of syphilis only. In the eight cases of associated tuberculosis and lues this temperature reaction occurred in two after .1 mg. of the Old Tuberculin; in five after injection of 1 mg.; in one after injection of 3 mg. The height to which the temperature rises is less important for the diagnosis than the typical steep peak in the curve, subsiding to the previous temperature within twenty-four hours. The absence of the general reaction speaks in favor of the syphilitic nature of the keratitis, and the steep peak of the temperature curve for its tuberculous nature. In leprosy and actinomycosis the rise is more gradual and lasts longer.

51. Myosarcoma of Stomach.—Moser reports from Frankfort what he claims to be the first successful operation on a myosarcoma of the stomach. He also describes a similar case operated on at Greifswald, which terminated fatally. Three other cases are on record of extensive resection of the stomach wall for myoma, with one recovery, but in the latter case the tumor was found to have a sarcomatous center. In the personal

before the operation. The lumbar incision was carried as far up as needed, and a hard bolster placed under the body, which rendered possible the access to the upper portion of the cardia, a region hitherto considered inaccessible. The mistake in the diagnosis unmistakably facilitated the operation.

58. Reform in Infant Clothing.—Assmus has been testing a number of substances to supplant the customary diapers for infants. He is much pleased with the results obtained by using an extremely absorbable material in a bag, with a double thickness of mull between it and the skin of the child. This absorbable cushion sucks up all the fluid in urine and feces at once and the child is dry all the time, requiring no changing except at morning and night except after defecation. As all the fluid in the feces is absorbed at once by the cushion, they do not spread and escape as with ordinary diapers. The cushion has also deodorizing properties, so that there is no smell of urine about the child nor in the room from diapers hung out to dry. When the child is taken up its garments and bed are always dry. The soft cushion fits and adapts itself comfortably to the child's body. The substance which fulfills all these conditions is bog moss (*Moostorf*), which has an absorbing capacity to sixteen times its own bulk. The experiences with it to date have been extremely satisfactory and it certainly realizes a great improvement and saving of expense in the care of the children of the poor. The moss and bags, etc., are supplied by the Berlin firm of E. Cohn Reisner, Neue Friedrichstrasse 65. Berlin C.

60. Antitoxin Treatment of Tetanus.—Schuckmann reports a case that terminated fatally the day after a second injection of Behring's antitoxin. He reviews the published statistics and remarks that the best method of administering it can be deduced from the following figures. In twenty cases the antitoxin was injected into the brain, with 25 per cent. recoveries; in three into the veins, with 33 per cent. recoveries; in forty-three the injections were subcutaneous, with 51 per cent. recoveries, and in ten the injections were subdural, after lumbar puncture, with 80 per cent. recoveries. In fourteen cases treated without serum the proportion of recoveries was 57 per cent., and in seventy-six cases treated with serum it was only 47 per cent. He does not believe that the serum treatment is of any appreciable advantage in cases of tetanus.

Riforma Medica, Palermo.

- 64 (XVIII, 213-4.) I limiti di resistenza del vene per i diuretici. Donzello.
- 65 (No. 215-6.) La influenza della bile sulla resistenza dei globuli rossi (red corpuscles). G. Viola and B. Tarugi.
- 66 (No. 217-8.) Un caso di cisti della testa (cyst in head of) del pancreas ed epatite sifilitica simultanea perfettamente la cirrosi di Hanot. L. Ferrannini.
- 67 (No. 219.) Sulla plastica col grande omento (plastic operations with omentum). A. Soraci.
- 68 (No. 220.) Sulla coagulazione del liquido di idrocele per azione del latte umano (by action of human milk). G. G. Ferrandi and E. Giannelli.
- 69 (No. 221.) Gli estratti alcalini degli organi di animali sani (of healthy animals) nella immunità verso il carbonchio ematico (anthrax). F. Tusini.
- 70 (No. 222-3.) Contributo casistico-clinico sulla cura dell'uremia con il veratrum viride. A. Ollare.
- 71 (No. 224-231.) *Il ferro nell'organismo sano (iron in healthy organism), nella leucemia e nella cloro-anemia. C. Bartoletti.
- 72 Il fegato infettivo (infectious liver) in una forma morbosa non ancora cognita (hitherto unknown). Galvagni.
- 73 (No. 232-3.) Contributo sperimentale alla fisiologia del nucleo caudato. D. Lo Monaco and G. Bellanova.
- 74 (No. 234.) A proposito dell'iniezioni endovenose d'ossigeno nell'uomo (in man). C. Bernabei. Claim for priority.
- 75 (No. 236.) Alcuni appunti sulla sensibilità di tensione del ventricolo (sensibility to tension of the stomach). P. F. Arullani.
- 76 (No. 237.) Su 2 casi di rumore musicale del cuore. M. De Vivo.
- 77 (No. 238.) *Sul significato e sull'importanza della citodiagnosi nelle meningiti dei bambini (of children). L. Concetti.
- 78 (No. 239-242.) *Intorno all'influenza del micrococco tetragono sul processo tubercolare del polmone (of lung). A. Michelazzi.
- 79 (No. 243.) *Sugli effetti dell'ischemia temporanea dell'apparecchio tiro-paratiroideo. C. Pinto.
- 80 (No. 244.) *Sulla glicosuria surrenale: ricerche dirette a determinarla nell'organismo umano. S. Barba.
- 81 (No. 245-247.) Osservazioni istologiche sui granulomi infettivi. T. Secchi.
- 82 ((No. 248-9.) Essudati e trasudati. A. Jardini.
- 83 (No. 250.) Vomito stercoraceo di origine isterica. F. Fazio. One case. Cured by massage and suggestion.
- 84 (No. 252.) *Sugli effetti dello svuotamento (excision) della sostanza midollare delle capsule surrenali. G. Vassale and A. Zanfagnoli.

- 85 (No. 253-5.) Ricerche sperimentali ed osservazioni anatomico-patologiche intorno alla miocardite segmentaria. G. Giacomelli.
- 86 (No. 256-7.) *Tabe dorsale ed aortite. P. F. Arullani.
- 87 (No. 258-260.) Contributo allo studio dell'anaciordria. Ricerche sulle putrefazioni intestinali e sulla medicazione ipercolorica. L. Ferrannini. Two cases.
- 88 (No. 261-2.) *Sull'agglutinabilità del bacillo tubercolare per sieri differenti e sua importanza diagnostica. A. Iivento.
- 89 (No. 263-4.) Metamerismo midollare e metamerismo radicolare nella siringomielia. L. Ferrannini.
- 90 (No. 265.) Sul potere (power) patogeno che il bacillo coli esercita nel cane (in dogs). G. Loy-Peluffo.
- 91 (No. 266.) Negative Action of Freezing Alternating with Thawing on Bacteria of Cholera, Typhoid, Diphtheria and Glanders. F. Testi.—Azione di geli e disgeli alternati sulla vitalità e virulenza di alcuni batteri patogeni.
- 92 (No. 267.) Le cardiopatie eredo-familiare e congenite. G. Arnone.
- 93 (No. 271-2.) L'azione del (action of) nitrato d'argento nella vaginale del testicolo leso ed infiammato ed infetto (in inflammation of testicle). V. Montesano.
- 94 (No. 273.) Caso di fibroleiomioma dello stomaco. G. Zironi.
- 95 (No. 274.) *Contributo allo studio dell'anasarca essenziale. P. Bacallini.
- 96 (No. 275.) *Sulla disvulnerabilità degli epiletici. V. Tirelli.
- 97 Benefits from Local Application of Balsam of Peru in Ulcerative Cutaneous Tuberculosis. G. Silva.—Sulla cura della tubercolosi ulcerosa cutanea. Ten cases.
- 98 (No. 276.) Il metamerismo secondario degli arti (of limbs). L. Ferrannini.
- 99 (No. 277.) Depressing Local Action of Cocain on Intestinal Absorption. A. Baldacci and G. Guidi.—Azione della cocaina sull'assorbimento intestinale.
- 100 (No. 278.) *Dangerous Alteration of Canned Meats. G. Grixioli.—Su una pericolosa e poco nota alterazione della carne conservata.
- 101 (No. 279-282.) *Sulla Linitis plastica del Brinton. A. Folli and U. Bernadelli.
- 102 (No. 283-285.) *Physio-pathology of Phosphorus Intoxication. A. Cividalli.—Lo stato del sangue nell'avvelenamento da fosforo con considerazioni sulla fisiopatologia dell'intossicazione fosforica.
- 103 (No. 286.) Study of Sheep Fox. E. Tabusso.—Contributo allo studio delle lesioni istologiche nel varlole ovino.
- 104 (No. 287-9.) *Study of Extensive Resection of Intestine. G. Fantino.—Nuovo contributo allo studio delle estese resezioni intestinali.
- 105 (No. 290.) Experimental Closure of Bladder Defect by Flap from Abdominal Wall. L. Baldassari and R. Finotti.—Trattamento delle perforazioni vescicali con trapianti.
- 106 (No. 291-2.) *Delle ernie della vescica (hernias of bladder). G. Baroni.
- 107 *La Milza nei bambini. F. Sarcinelli.
- 108 (No. 293.) *Su di alcune questioni relative ai corpi acetici. G. Satta.
- 109 (No. 295.) Indirizzo alla cura del lupus erithematodes. R. Campana.
- 110 (No. 296.) Cisti epiteliale del pancreas e cancro del fegato (liver). G. Cavazzani.
- 111 (No. 297-8.) Patogeni dell'anemia perniciose progressiva. G. Finzi.

71. Elimination of Iron in Health and Disease.—Bartoletti's long article on this subject establishes that subcutaneous injection of iron in health causes an increase for the first few days in the amount eliminated in the urine. As a general rule he found that the proportion was 2.39 to 2.14 on a mixed diet and 5.19 on a meat diet, but the quantity of urine voided during the twenty-four hours must always be taken into account. The amount eliminated in leukemia is not appreciably less than that in health, reaching the minimum of the latter. In chloroanemia the proportion is much reduced. There does not seem to be any regular proportion between the amount of iron in the blood and the amount eliminated, even in the same individual. The decrease in the proportion of iron in the blood in leukemia and chloroanemia is not proportional to the decrease in hemoglobin. In short, he concludes that the laws regulating the elimination of iron are still totally unknown. The variations may be due to differences in the functional capacity of the kidneys.

77. Slight Value of Cytodiagnosis.—Concetti has been making an extensive study of the cerebrospinal fluid as a means of diagnosing meningitis in children. He finds that the predominance of lymphocytes is the expression of an irritation of the meninges of toxic origin, while the predominance of polynuclear cells and of the large mononuclears is the expression of a bacterial irritation. The polynuclear and large mononuclear cells gather to repel the invading bacteria by their phagocytic action. Cytodiagnosis thus has not the differentiating value ascribed to it by Widal and others. The formula changes as the irritation is toxic or bacterial, irrespective of the nature of the toxins or bacteria in question.

78. Influence of Tetragonus on Tuberculous Processes.—Michelazzi was able to protect guinea-pigs against tuberculosis

by a previous injection of cultures of the micrococcus tetragonus. On the other hand, the tuberculous process was favored when the tetragonus injection was made after tuberculous infection had been realized. He found that the lesions produced by the tetragonus alone in guinea-pigs were identical in every respect with those produced by the tubercle bacilli. Many supposed tuberculous lesions in the human lung are undoubtedly the work of the tetragonus.

79. Effects of Temporary Ischemia of Thyroid Apparatus.—Pinto reports that ischemia for sixteen to thirty-one hours induced parathyroid tetany in the numerous dogs in his tests. If the ischemia was maintained for more than thirty-one hours, the animals exhibited mixed phenomena or pure parathyropriva cachexia. The organs were apparently sound in the animals subjected to ischemia for twelve hours or less, when examined a month later, but those with ischemia for sixteen hours to twenty-two days still showed signs of slight alterations.

80. Suprarenal Glycosuria.—Barba relates his experience with three patients treated by injections of suprarenal extract. The effects were an aggravation of the general condition in a case of Addison's disease. One of the other patients was in an early stage of tabes and the other had chronic bulbar paralysis. The general health was improved in these cases and diuresis increased. No glycosuria was induced in any instance, nor in tests on healthy subjects.

84. Effects of Excision of Medullary Substance of Suprarenal Capsules.—Rabbits and cats died in rapidly progressive cachexia after extraction of most of the medullary substance. Partial excision did not produce any appreciable symptoms.

86. Tabes and Aortitis.—Arullani has observed that lesions of the aorta are very common in tabes. When a valvular affection develops in the course of tabes it is almost certain to be aortic insufficiency from dilatation of the aorta. This is due to the action of syphilis, alcohol, lead or some other intoxication.

88. Agglutination by Tubercle Bacilli.—Ilvento's experience has confirmed the fact that the serum and pleural effusion of tuberculous subjects are able to agglutinate the bacilli. It not only serves as a diagnostic measure but affords insight into the relative immunity of the organism in question.

95. Traumatic Dropsy.—The patient was a woman of 29, previously healthy, who fell into the water. In consequence, undoubtedly, of the fright and the cold, general dropsy developed.

96. Strong Bactericidal Action of Epileptic Serum.—Tirelli has found that the serum of epileptics is much more bactericidal than ordinary serum. It is especially active against staphylococci, and he suggests that it might be possible to utilize it to induce immunity against and also to cure staphylococcus infection. He ascribes to this peculiarity of the serum the rarity of suppurative lesions in epileptics.

100. Liquefaction of Gelatin as Test of Canned Meats.—Grixoni proclaims that when the gelatine in canned meats is liquified at a temperature below 64.5 F. it can be attributed to the action of living bacteria and their ferments. The meat should be considered spoiled, although it may not exhibit any other evidence of putrefaction except a splashing sound when the can is shaken.

101. Linitis Plastica.—The four cases described presented the clinical picture of plastic linitis, but histologic examination disclosed diffuse carcinomatous degeneration.

102. Coagulability of Blood in Phosphorus Intoxication.—The coagulating power of the blood was quite abolished after five days of subacute phosphorus intoxication in the tests on animals described in this communication.

104. Resection of Intestine.—Fantino remarks that the cases most favorable for extensive resection of intestine are those with hypertrophy of the sound portion. The first or second part of the small intestine is the best portion for such an operation. In one of the two cases he reports he failed to recognize the part of the intestine involved; and, under a mistaken impression, resected the entire colon and three feet of the small intestine. The patient survived nine months in

comparatively good condition. The anastomosis was made under the same incorrect impression, and the food passing through the intestines had to travel a very roundabout route. This kept it longer in the intestines and gave more time for digestion, and to this fact he ascribes the unexpectedly favorable results secured. He suggests that the disadvantages of extensive resection of the intestine might be counteracted by modifying the technic so as to compel the ingesta to follow a circuitous route and thus have as good opportunity for digestion as under normal conditions.

106. Hernia of Bladder.—If the bladder alone is involved in the hernia the sac will be soft and flabby when empty and distended when full of urine. Its size also alters with change of position, coughing, etc. Pressure on it induces a desire to urinate. When the bowel is also involved besides the part with the above characteristics, the sac has a second usually the outer part, which has the characteristics of an intestinal hernia. The catheter may be passed through the urine into the sac or may aid in the diagnosis by withdrawing urine from it. After the subject has spontaneously voided his urine, an additional portion may be emitted on compression of the tumor. There may be pain in the kidney region on the side of the hernia. Resection is inadvisable unless the communication with the bladder is extremely small.

107. Percussion of Spleen in Infants.—If the child is held by a third person so that the spleen is at the lowest position possible, in the back, percussion applied from below, on the back, will avoid interference from other organs and afford more information than is obtainable in any other way. The child is held in a position that is neither on its back nor on its left side, but between these.

108. Acetonuria.—Satta investigated the influence of ingestion of fats on the elimination of acetone in ten diabetics. He found that 12 to 15 gm. of butter increased the acetone by a gram in the severer cases, but in the mild ones it had little influence. Olive oil and beef fat had a similar effect, but less pronounced.

Revue Mens. des Maladies de l'Enfance, Paris.

- 112 (XXI, 1.) *Splénomégallie chronique avec anémie et myélémie. Forme infantile. P. E. Weil and A. Clerc.
- 113 Flèvre typhoïde et entérite chez le nourrisson (In nurslings). P. Nobécourt.
- 114 (No. 2.) De l'œsophagotomie externe pour les corps étrangers de l'œsophage chez les enfants (foreign bodies in esophagus in children). G. Gross.
- 115 Ponction galvano-caustique des abcès retro-pharyngiens. H. Chatellier.
- 116 (No. 3.) Varices du crâne (of skull) dans le rachitisme. C. Aubertin.
- 117 Action de la vaccination sur la coqueluche (on whooping cough). G. Ponchon.—Extremely Favorable.
- 118 Tubercules du cervelet (in cerebellum). Lymphocytes et bacilles de Koch dans le liquide céphalo-rachidien. P. Nobécourt and R. Volsin. One case.
- 119 Anémie infantile pseudo-leucémique. Traitement arsénical. Guérison (recovery). Mahar and others.
- 120 Strophulus post-vaccinal. H. Gillet.
- 121 *Valeur des linges (linen) stérilisés contre les infections cutanées des nourrissons (of nurslings). W. Weill Agnel.

112. Chronic Splenomegalia with Anemia and Myeloma.—Study of the blood shows that splenic anemia comprises lymphogenic leukemia and myelogenic leukemia in nurslings as well as in adults. The prognosis is grave, but not inevitably fatal in the infantile form. Treatment to date has not given very encouraging results. Iron and arsenic are the main reliance, but Combes has reported good results from administration of bone marrow, and Pietro of the extract of fresh spleens.

121. Sterilized Linen for Infants.—This communication from Lyons states that during the last few months the diapers and garments used for the infants in the hospital have been sterilized in the same way as the dressings, etc., for surgery. The outfit for each babe is wrapped in a separate cloth, arranged in order and then sterilized and handled as little as possible. The attendants disinfect their hands as for assisting at an operation before taking up the babe. They find that the extra trouble is more than compensated by the prevention of cutaneous affections and the rapid healing of those observed when the infant is first received. This method of aseptic care of infants has been found to pay in the saving of both time and trouble in the end, beside the advantages for the child.

Revue de Therapeutique, Paris.

- 122 (LXX, 1.) Les tendances nouvelles de la thérapeutique. C. Bouchard. See THE JOURNAL of February 21, p. 545.
- 123 Le traitement des néoplasmes par le suc de tumeurs carcinomateuses. Bra.—Claim for Priority.
- 124 Preparations aqueuses de menthol. Crésantignes.
- 125 (No. 2.) *Du moment opportun de la cure thermale chez les utérins (hot springs in uterine disease). R. Blondel.
- 126 *Traitement médical des fistules anales. A. De Vevey.
- 127 (No. 3.) La theocine. J. Chevallier.
- 128 Les rayons x dans l'examen du foie (radioscopy of liver). Bergoué.
- 129 *L'enteroclyse dans la dysenterie algue et chronique. V. Belleli.
- 130 (No. 4.) Nouvelles médications hémostatiques. A. Chassevant.
- 131 *Sérothérapie antistaphylococcique. E. Doyen.
- 132 (No. 5.) *Traitement de la goutte. Debove.
- 133 Les sels d'atropine et leurs indications en thérapeutique oculaire. A. Darier.
- 134 L'anesthésine en rhino-laryngologie. A. Courtade.

125. Hot Springs in Uterine Affections.—Blondel proclaims that, aside from the acutely inflammatory and painful stage and from absolutely irreducible lesions and tumors, a course of hot mineral springs waters may be found beneficial at any phase of a uterine affection. The menstrual period is no contra-indication, on the contrary, the system is in a peculiarly favorable receptive condition at such times. The "thermal cure," as the French call a course of treatment at the hot springs, is particularly beneficial in the leucorrhea of anemic subjects, in congestion of the uterus in arthritics, in chronic parametritis, in physiologic menstrual troubles, and in uncomplicated ovarian pains, also in cases of chronic and rebellious vaginal discharges in herpetic and arthritic women. After the thorough working over of the soil, therapeutics is more effective, and instead of waiting to advise the waters as a last resort, he advises prompt resort to them as a most valuable adjuvant in uterine affections.

126. Medical Treatment of Anal Fistulas.—De Vevey reports five cases of anal fistula in which surgical intervention was impracticable, and in which he succeeded in curing the patients in the course of six to eight months by repeated injections of a 2 to 2.5 per cent. solution of copper acetate. He irrigated the parts three times a week with this solution, applying it on a compress in the interim, and insisting on the patient's reclining. He also gave internally guaiacol and small doses of dilute copper acetate.

129. Flushing the Intestines in Dysentery.—Belleli practices at Port Said and has found injections of a liter of tepid water to which 20 to 40 drops of carbolic acid have been added, so useful in dysentery that he is inclined to regard them as almost a specific for this disease. The colics and flatulence subside and the recurring exacerbations are less frequent and less painful. If the buttocks are raised 25 to 30 cm. above the level of the head, the water flows into the transverse colon without the need of any special apparatus. It is then rapidly voided. In chronic dysentery there is usually recurrence of the painful spasmodic attacks every fifteen to thirty days. It is probably due to some peculiarity in the life cycle of the amebæ, and can be prevented, or at least modified, by giving the injections in a mucilaginous vehicle and adding an astringent. He has found the following combination useful: 50 to 60 gm. of althea in 2 liters of water, with 3 to 5 gm. of tannin and 30 to 40 drops of carbolic acid. It is wise to vary the astringent at times, substituting 2.5 to 4 gm. of alumol to the 2 liters of water. This enteroclysis must be accompanied by the administration at the same time by the mouth of 2 or 3 gm. of bismuth salicylate a day, to soothe the erethism of the gastrointestinal tract. The salicylate may be alternated with dermatol, tannigen or vaccinum myrtillus. He gives the latter in a decoction. Opium should be strictly avoided.

131. Antistaphylococcus Serum.—Doyen complains that little attention has been paid to his announcement of the success of the serum he has produced by means of inoculation of animals with the *Staphylococcus aureus*. It has proved more powerful and more constant in its effects than any other serum yet known in experiences with hundreds of cases. At the early stages of a furuncle or abscess a single injection of 5 c.c. is usually sufficient. The pain and tension cease in two or three hours and the lesion is aborted. In a large carbuncle complicated by diffuse phlegmon, the elimination of the necrosed portions proceeds so rapidly under the influence of the serum

that in six to eight days nothing remains of the lesion except a small red granulating surface. The serum was applied in a case of severe phlebitis of the ophthalmic vein and cavernous sinus, with bilateral ophthalmia and delirium. The patient recovered, although the infection had been so severe that the sight of one eye was lost. The improvement was rapid in a case of phlebitis of the cavernous sinus consecutive to a carbuncle on the temple, the patient already in coma. The sore throats and other lesions due to the staphylococcus yield to the serum with equal promptness, but it has no influence on streptococcus infections. One of its most promising applications is in simultaneous injection with antitetanus serum in cases of complicated fractures, extensive contusions and soiled wounds. In a recent case of this kind, a complicated fracture of both legs in a railroad accident, in which amputation seemed inevitable, under this combined serum treatment the patient made a smooth recovery and his legs were saved.

132. Treatment of Gout.—Debove warns that gouty subjects are the most difficult patients to handle. They have notions of their own in regard to medicines and argue with the physician at every step. On the other hand, they are extremely credulous as far as quacks are concerned. He remarks that morphin is the most admirable of all remedies in the treatment of the accidents of acute, painful gout, while it is the most deplorable of all in the chronic form.

New Patents.

- Patents of interest to physicians, March 3 and 10:
721773. Optical apparatus. Eugene W. Beebe, Milwaukee, Wis.
721999. Producing casein. Aubrey D. Charles, Bellows Falls, Vt.
722102. Nasal dish. Harry L. Harris, New York.
722019. Instrument for removing blackheads. A. A. C. Hildebrandt and N. W. Johnston, Chappaqua, N. Y.
721812. Hernial truss pad. Paul A. Lorenz, Dresden, Germany.
722121. Suspensory bandage. James L. Lupfer, Swatara Township, Dauphin County, Pa.
721963. Pad for hernial belts. Florentin Matuchet, Paris, France.
722130. Vaginal syringe. Donald McPherson, Palmyra, N. Y.
722133. Surgical needle. John A. Nelson, Owensboro, Ky.
721737. Movement cure apparatus. Charles Owens, Chattanooga, Tenn.
721752. Compressed air spray. Loyd Scruggs, Omaha.
721768. Making India rubber surgical instruments. Bertram G. Work, Akron, Ohio.
722203. Hypodermic needle. Charles D. Brooke, Coshocton, Ohio.
722503. Disinfecting apparatus. Eugene Fournier, Paris, France.
722304. Electrical instrument. Myron D. Law, New York.
722398. Electrical generator and distributor for medical use. Edwin L. Madden, Kanawha, Iowa.
72097. Re-issue, bottle for medicine. Charles W. McShane, Zanesville, Ohio.
722456. Stretcher. James E. Reeves, Philadelphia.
722542. Surgical instrument. Nathan J. Smedley, Chicago.
722462. Exercising apparatus. Frederick D. Smith, New York.
722644. Abdominal supporter. Eva M. Temple, Portland, Ore.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY FOR 1903. A Yearly Digest of Scientific Progress and Authoritative Opinions in All Branches of Medicine and Surgery, Drawn from Journals, Monographs, and Text-Books of the Leading American and Foreign Authors and Investigators. Arranged, with Critical Editorial Comments, by Eminent American Specialists, under the Editorial Charge of George M. Gould, A.M., M.D. In Two Volumes. Volume I, including General Medicine. Cloth. Pp. 691. Price, per volume, \$3.00 net. Fully illustrated. Philadelphia, New York, London: W. B. Saunders & Co. 1903.

PRACTICAL PHYSIOLOGY. By A. P. Beddard, M.A., M.D., Demonstrator of Physiology, Guy's Hospital; Leonard Hill, M.B., F.R.S., Lecturer on Physiology, the London Hospital; J. S. Edkins, M.A., M.B., Lecturer on Physiology, St. Bartholomew's Hospital; J. J. R. MacLeod, M.B., Demonstrator of Physiology, the London Hospital, and M. S. Pembrey, M.A., M.D., Lecturer on Physiology, Guy's Hospital. Illustrated in Numerous Diagrams and Tracings. Cloth. Pp. 495. Price, \$5.20. London: Edward Arnold. New York: Longmans, Green & Co. 1902.

SURGICAL ANATOMY. A Treatise on Human Anatomy in Its Application to the Practice of Medicine and Surgery. By John B. Deaver, M.D., Surgeon-in-Chief to the German Hospital, Philadelphia. In Three Volumes. Illustrated by 490 Plates, Nearly All Drawn for This Work from Original Dissections. Volume III. Abdomen; Pelvic Cavity; Lymphatics of the Abdomen and Pelvis; Thorax; Lower Extremity. Cloth. Pp. 816. Price, per set, \$21.00. Philadelphia: P. Blakiston's Son & Co. 1903.

MANUAL OF BACTERIOLOGY. By Robert Muir, M.A., M.D., F.R.C.P., Ed., Professor of Pathology, University of Glasgow, and James

services would necessarily have to be taken in order to keep properly abreast of the advances which are being made in the different branches. Again, such broad subjects as neurology, obstetrics and gynecology may, in the same way, be classed under the head of general medicine. The term "professor of clinical medicine" in our universities is evidently a misnomer, as there is a clinical medicine of so many branches that, as I have just stated, it would be impossible to have these branches well covered by one man, even if such a man simply superintended the teaching of them. Such methods would be very unsatisfactory, and he would continually find that, unless he could have time and opportunity for teaching in the various hospitals devoted to the especial branches, he would inevitably fail to keep abreast with those who were studying these branches in especial hospitals and who would soon fail to recognize him as their chief. It has become very evident, therefore, that a number of subdivisions of general clinical medicine must not only be recognized in the teaching curriculum of any advanced medical school, but that it must be insisted on that the teaching of these various divisions should be fostered in the special hospitals where the greatest opportunities are given for the study of them, and that physicians should be appointed to these hospitals who not only will best serve the patients, but will also, from their general education, personal enthusiasm and capabilities, best impart to the student of medicine the practical knowledge of diagnosis and common sense treatment, which can only be obtained in this way.

It is often asked wherein the diseases of children differ from the diseases of adults, and much skepticism as to such difference exists in the minds of those who have had little opportunity for studying clinical medicine, both in the large general hospitals devoted to adults and in the hospitals devoted to the early periods of life. The fact is that, with very few exceptions, there are no diseases of children; diseases of children is a misnomer; what we have to deal with is a manifestation of diseases as they occur in children. The disease, or, rather, the cause of the disease, is the same, whether it be in later or earlier life. It is the differences that occur in these diseases, according to the period of life when they are studied, that makes so very difficult the teaching of the pathology, symptoms, diagnosis and treatment of old age, of fully developed adults, of adolescence, of children in the early period of childhood, in the middle period of childhood, of infants in their second year, in the middle or latter part of their first year, in the early months, weeks or days of early life, and of premature infants. If we appreciate the great clinical differences in these periods, great in their extent, broad in their scope, important in their relations, we can not but be forced to a conclusion that a problem quite large enough for one man at present to deal with is presented by the clinical medicine of old age, of fully developed adult life, and of adolescence, and for another of the different periods of childhood and infancy.

So far as the name of the department devoted to the study and teaching of children and infants is concerned, it really makes very little difference under what name we teach, provided that sufficient proportionate time be given to each branch by the men who have the greatest opportunity for studying and improving their knowledge of these periods of life. At Harvard we have decided to use the name *pediatrics*, a word meaning the hygienic or medical teaching of children. The medical societies devoted to the study of children have adopted this name;

the medical journals devoted to the diseases of early life have also assumed this name. We should understand, therefore, that there is a clinical medicine of early life from birth to adolescence.

If we decide that there are no, or few, especial diseases of children, but that our province is to teach clinical medicine according to the age and stage of the development of the patient, the study of pediatrics becomes much simplified. The more, however, that we study the conditions of early life, both in health and in disease, the more are we impressed by the breadth of the subject, and the more are we convinced that a much larger amount of time should be given to it before a student can be expected to intelligently diagnose its diseases and practically treat them. At Harvard the subject of pediatrics is taught through the whole third year, and is soon to become a part, also, of the fourth year, when opportunities will be given for advanced teaching. The idea which is at present held with us, is that the best method of teaching, and the one which will be carried out after the new medical school buildings and the hospitals connected with them have been finished, will be somewhat as follows:

In the first place, we recognize that the most thorough and systematic study and treatment of disease at the different periods of life can be best accomplished by having, so far as is possible, these different periods of life taken care of in separate hospitals. Where infants or young children have in the past been treated in connection with adults, it has almost invariably happened that in the hospital management most attention has been paid to the later period of life, at the expense of the earlier. We, therefore, expect to have, in connection with the Harvard Medical School, a children's hospital and an infants' hospital, entirely separate from each other and from the general university hospital for adults. In like manner, we have learned by experience that where it has been attempted to arrange a hospital régime for both children and infants, it is the infants who are most likely to suffer, such a great difference between these two degrees of development exists in the amount of air space needed for the individual, in the requirements for the laundry, in the number of nurses, and lastly in the method and precision of feeding. It has, indeed, been found that much greater advances in the study of and in the care of infants can be obtained by having them under entirely separate hospital management. So far as university medical teaching is concerned, it is as important to treat these different classes of cases in different buildings as it is to have separate laboratories for physiology, bacteriology and chemistry.

It would be impossible in one evening to enumerate all the phases of the different diseases which in early life markedly differ from the manifestation of disease in later life. A slight review, however, of the differences which have been impressed on me as important, and the fact that such differences exist and require much time to teach will perhaps be of interest to you. From the very beginning of my studies in pediatrics I have been impressed with the idea that a knowledge of the anatomic and physiologic conditions which exist in the early periods of life is the keynote to the proper understanding of the diseases of this early period and is of prime importance for its diagnosis and treatment. I might mention as important anatomically, the open petro-squamosal suture which exists and continues to exist in the first two or three years of life, and that

this anatomic condition, in connection with the great proportionate vulnerability of the infant to infection of the middle ear, makes possible a variety of cerebral symptoms which are seldom seen in later life, while at this early period they are very common. These symptoms can only be thoroughly understood and intelligently dealt with when we appreciate the value of this anatomic condition. Again, a knowledge of the greater frequency of adenoid growth at an early period of life, carries with it the explanation of the symptoms of many abnormal conditions which otherwise would fail to be understood unless this tendency to lymphoid growth were recognized. Again, the recognition that in early life the bladder is an abdominal, and not a pelvic organ is of importance to the surgeon, while the greater proportionate length and freedom in motion of the mesentery is of the greatest significance in regard to the intussusceptions, which are so much more common in infants than in the later stages of development. In like manner the greater proportionate length of the sigmoid flexure in early infancy, and the continuation of this condition to a later period becoming an error of development, with its accompanying symptoms connected with rhachitis, illustrates how the diagnosis of many diseases would be very obscure unless these anatomic conditions were recognized. The development of the bones and the different periods of ossification, present to us anatomic facts which are of great aid in the diagnosis of the period at which certain diseases develop, and has, in cardiac diseases, aided us in differentiating congenital from acquired lesions of the heart. I refer to the displacement of the sternum, which, when produced by intrathoracic pressure, takes one or the other form according to the period of ossification of the different parts of the sternum, in relation to the time when the cardiac disease began. A careful study of the various investigations which have been made in the physiologic laboratories, shows that the physiologic conditions which normally occur at different periods in early life are of the utmost importance in connection with the treatment of the diseases which arise at these periods.

It is not only the physiologic investigations in connection with gastric and duodenal digestion which plays so great a rôle in the various disturbances of early life, but also the studies which will in the future be carried to still greater perfection in connection with the unstable nervous system of early life, and the undeveloped conditions of the nervous centers. There is not much doubt, also, that a special study should be made of the pathologic conditions which arise in early life, a knowledge of which is of the greatest aid, not only for the intelligent treatment of the organs affected, but also in the aid which it gives us in determining the prognosis of the especial diseases. The wonderful recuperative power of the kidney in the early periods of life, is an instance of this, and makes the pathologic study of the various forms of nephritis as well as of functional renal diseases extremely interesting and important.

The pathologic conditions connected with the three most important diseases of nutrition which occur in early life, and which have a peculiar significance in the clinical medicine of that period, namely, infantile scurbutus, infantile atrophy and rhachitis, present only a small part of the immense amount of especial study which is needed for these diseases which primarily only occur in early life, but the results of which are found at a much later period of development.

Again, in studying the diseases where there are de-

cided pathologic lesions of special organs we must recognize the varied forms of meningitis or of simple cerebral irritation which occur so much more frequently among infants and young children than in older children and adults. The study of the different organisms which produce so readily and so frequently cerebral symptoms in early life opens up in itself an immense field of investigation, a field which can best be studied in the wards of hospitals devoted to infancy and to childhood. The variety of lesions and of symptoms which occur in the pneumonias of infancy are so great in number that they form a special clinical medicine in themselves. The mixed infections, so much more common in early life than at a later period, illustrate this statement and teach us that a knowledge of the pneumonias of later life are entirely inadequate for the symptoms, diagnosis and prognosis of an earlier period. Again, we may mention the susceptibility of the heat centers in infants and young children to the action of very cold baths and to ice bags applied to the head, by which the vitality of the patient is so frequently lowered as not infrequently to cause collapse, whereas in later life the same treatment might be used with benefit.

The proper appreciation of infantile eclampsia in all its varied forms and with its manifold etiology calls for a study of many years to be fully understood, and shows us that this condition often arises from entirely separate causes from the eclampsias of a later period, in that it so often depends on the anatomic and physiologic conditions as only exist in early life, and which lose their significance at a later period.

Another set of diseases which causes not only many symptoms connected with an early period of development, but also presents the most serious results from its terminal processes in later life, is a certain class of infectious diseases, such as scarlet fever, diphtheria, measles, pertussis, varicella and others which illustrate this statement. In this connection it is extremely interesting to observe the cardiac dilatations secondary to and the cardiac hypertrophy tertiary to scarlet fever. These serious conditions are far more common in infancy and childhood than at a later period, and this class of diseases is so much more frequent in children than in adults that they may almost be called diseases of early life. The rôle which they play is very great, and they should as a class be one of the principal features in the curriculum of the pediatric department, for they belong to it.

The much greater frequency of the diseases of the mouth and of the gastroenteric tract in early life makes a much more extended knowledge of these diseases and special precision in the nomenclature which covers them necessary for those whose province it is to practice principally among children and to teach pediatrics.

This subject of nomenclature is of a good deal more importance than is usually recognized, and the study of pediatrics would be much more simple if such a classification were in vogue in all the universities, even if it were only temporary, as it might be used until some better one could be obtained.

What is especially important is to classify these diseases under some one reasonable nomenclature, so that physicians in the different parts of the world can know in writing on and investigating the diseases of the mouth or of the gastroenteric tract what each one is talking about, and not be at a loss to know if some one else is investigating the same disease under a different name, or, as is especially noticeable in the group of diseases

which is classified under dysentery, calling a number of diseases by one name.

I have thought it worth while to show you the classification which we have temporarily adopted at Harvard in these diseases. This classification of diseases of the mouth in early life is one which was adopted by the pediatric department of Harvard after it had been presented to and endorsed by the American Pediatric Society at its meeting at West Point in 1893, and was prepared by Dr. F. Forchheimer of Cincinnati and myself, who had been appointed by the society in 1892 as a committee to carry out this work.

The infectious diseases of the mouth are so much more frequent in infants than in older individuals that a systematic nomenclature was found to be especially necessary in order that the subject could be taught more systematically and rendered more intelligible to the student. It is not necessary in presenting this nomenclature to explain to you in detail the various facts on which it is founded. The main idea is that there is probably in every disease of the mouth an underlying stomatitis which renders the mucous membrane of the buccal cavity vulnerable to the various organisms which cause its disease.

NOMENCLATURE OF DISEASES OF THE MOUTH.

Stomatitis .	{	Catarrhalis . . .	{ Simplex. Exanthematica... Traumatica . . .	{ Secondary to the exanthemata. Mechanical. Thermal. Chemical.
		Herpetica . . .	Aphthosa. Scorbutus.	
		Ulcerosa . . .	Mineral poisons. .	{ Arsenic. Lead. Mercury.
	{	Mycetogenet- ica.	Other diseases. Hyphomycetica... Pseudo-Membran- osa.	{ Thrush. Diphtheria. Tuberculosis. Syphilis and like diseases.
			Gangrenosa. . . .	Noma.

The following nomenclature of the diseases of the gastroenteric tract in infancy shows the classification which is now used in the department of pediatrics at Harvard, and is the one which was endorsed by the American Pediatric Society at its meeting in Washington in 1891, when it was presented by a committee appointed by the society to simplify the unnecessary, complicated and irrational names which up to that time had been in vogue throughout the world. This committee consisted of Dr. Emmett Holt of New York and myself. This nomenclature is merely intended to fill temporarily a much-needed demand until a more precise and rational nomenclature can be drawn up on a purely etiologic basis.

At present in the Harvard Medical School pediatrics is taught every day in the week during the entire medical year. Early in the beginning of the course, during the first month or six weeks, I personally give some elementary lectures to the whole class on three broad subjects:

1. On the elementary knowledge required to appreciate scarlet fever, measles, varicella and diphtheria. As soon as this elementary instruction has been concluded the students are sent in sections to the South Department of the Boston City Hospital, where one of my instructors shows them cases of scarlet fever, measles, diphtheria or any other contagious diseases which happen to be in the hospital. This South Department of the City Hospital is a separate hospital in itself, and is one of the best equipped and finest in the world, probably coming second only to the one in Glasgow. The students are here taught the diagnosis and treatment of

the diseases, the best methods of disinfection and isolation, intubation and the use of antitoxin. Each student is required to report on two cases which he has seen during the course of this instruction, and this report is submitted to me at the end of the year, and is taken into account in the final examination for the degree.

The close relation between the different diseases which occur in children, both as to the terminal processes caused by these acute infectious diseases, or occurring in connection with these diseases, such as whooping cough and the different forms of pneumonia, is of such great importance to the student to see before entering into practice, that it has been deemed advisable to still further

NOMENCLATURE OF DISEASES OF THE GASTROENTERIC TRACT.

A. Gastric.	{	2 Functional...	Develop- mental.	{ a Malforma- tions. b Malpositions	{ 1 Nervous . . . Central-reflex. vomiting. 2 Cyclic vomit- ing. 3 Indigestion. Indigestion.
				{ a Acute... b Chronic... c Eliminative.	
			3 Organic. . .	{ a Non-inflam- matory. b Inflammato- ry.	{ 1 Mechanical. 2 Ulcers. 3 New growths 1 Acute gastritis. 2 Chronic gastritis. . Catarrhal.
	{	2 Functional...	1 Develop- mental.	{ a Malforma- tions. b Malpositions	{ 1 Nervous . . . Central-reflex. 2 Indigestion. { a Duodenal. Central-reflex. 3 Indigestion. { b Intestinal.
				{ a Acute... b Chronic... c Eliminative.	
			3 Organic... .	{ a Non-inflam- matory. b Inflammato- ry.	{ 1 Nervous . . . Central-reflex. 2 Indigestion. { a Duodenal. b Intestinal. 3 Incontinence 4 Constipation . Atonic-spas- modic.

C. Animal parasites.

broaden this course, and we are now contemplating giving advanced teaching in these diseases in the last year of the school course.

2. In like manner I give an elementary course on the gastroenteric diseases of infancy to the whole class just before the clinical teaching of these diseases is given in the wards and out-patient clinics.

3. I have also found that it is necessary to give some preliminary lectures on human breast feeding, and on the general principles of our American percentage feeding, before the practical teaching, both in the classes and in the wards, can be carried out with success.

What I especially wish to explain in regard to what I have just said is, that certain preliminary didactic lectures should be given on the subjects just mentioned before the student is given his bedside instruction.

After these three preliminary divisions have been briefly mapped out for the students, certain didactic lectures are given by myself twice a week to the whole class, such diseases being especially spoken of which it so happens in an especial year can not be obtained for the clinical

exercises. When examples of these diseases can be obtained the didactic teaching is replaced by the clinical, and what I have found to be of especial value in this latter method of instruction is not only the close intercourse with the individual student which it allows, but also the mutual stimulation to criticize and discuss the various features of the case with each other which it engenders, as these exercises are made entirely informal. Certain subjects are also taught from the text-book, but this part of the teaching is very limited, and is soon supplemented by what we are in the habit of calling case teaching. This is usually given at the end of the year, just before the examination, and is a discussion of picked cases, the history of which has been given to the student (printed) in the previous week, so that he may have the opportunity of studying the case before it is discussed. The teaching of the whole class, both didactic, clinical, by recitations and by case teaching, plays, however, but a small part of what we consider the best methods of instruction in the department of pediatrics. The greater part of the teaching is given in sections of five or six, in the wards of our infants' and children's hospitals, and it is this class of teaching which we think most of at Harvard. The other methods are simply preparatory, and in order to systematize the student's knowledge of the subject and to crystallize his ideas.

Recognizing what I have told you concerning the importance of anatomy, physiology and pathology in the study and teaching of pediatrics, they should be made a part of the curriculum of all advanced medical teaching, as should a course on laboratory therapeutics. We expect that the anatomic department will give an especial course on the anatomy of children, and the physiologic department has intimated that it will also give especial physiologic instruction in connection with infancy and children, preparatory to our later clinical teaching in the hospitals. In this way only can pediatrics be thoroughly and intelligently studied, and the young physician can not acquire a proper knowledge of infants and of children if his anatomic knowledge comprises only the anatomy of a later period, as is usually the case in most of our medical schools in the past. There is just as much reason in preparing students for the clinical study of infancy and childhood, by especial anatomic and physiologic teaching, as that such preparation should be made for the clinical medicine of adults.

Bearing all these facts in mind, we are deducing from them a system for teaching in the department at Harvard certain practical measures which we expect to carry out and perfect when the buildings and hospitals of the new medical school are erected. In the first place, we expect to teach the diseases of the first two years of life, in a hospital built and arranged for this age, and to have another hospital arranged for the needs of sick children between 2 and 12 years of age, with especial arrangements for the teaching of the different diseases as they occur at that period. We have also decided that such diseases as scarlet fever, measles, diphtheria, varicella and pertussis are so essentially connected with the early periods of life that they should be taught in the department of pediatrics, and with this end in view an assistant professor who has control of the fine department for contagious diseases in connection with the Boston City Hospital has been placed in the department of pediatrics.

There is another question that is of importance in looking on the study of pediatrics in this broad way, namely, that a thorough knowledge of the subject is of

inestimable value to the practitioner of medicine, whether he be the so-called general practitioner, or whether he devotes himself entirely to children. The treatment of diseases in children is not necessarily a specialty. The physician can only decide how much of this clinical medicine he is able to practice or to teach well, by gauging his own capabilities to grasp the especial subject and his opportunities of so doing. There is surely enough to be learned and enough to be done in the clinical medicine of infancy and children to more than fill the time and tax the brain of the average practitioner. It is needless to say how important a great deal of knowledge of infants and children is to the general practitioner of medicine. When we consider how it is usually through the younger members of the household that the young physician enters into his practice, it is very evident that much more study in the practice of pediatrics is needed by the average practitioner, especially when we see how numerous are the mistakes and how bad the results of his treatment; in fact, it not infrequently occurs that the child is found to be suffering, not from the terminal processes of the disease which it has just been treated for, but from the inappropriate treatment to which it has been subjected.

In conclusion, let me express the hope that I have not dwelt at too great length on a subject which has only recently gained recognition as one worthy to be raised and placed on a level with other great departments of medicine. It is my belief that as time goes on the leading medical schools of this country will adopt a policy similar to that which I have outlined as prevails in Harvard University, and I shall merely say, in parting, God-speed to the development and teaching of pediatrics in your great city.

THE TREND OF MODERN SURGERY.*

JAMES E. MOORE, M.D.

MINNEAPOLIS.

Westerners as a class have the reputation of thinking well of themselves and of being rather boastful of their achievements. It is very evident that others would not think well of us if we did not think well of ourselves, and it is now conceded by those whose good opinion we prize most highly that western surgeons have accomplished much of which they may be proud and even a little boastful. Most of those present have been obliged to do surgery under a serious handicap. We have had no marble walled operating rooms and no rich endowments. We have been obliged to build our hospitals as we went along and our endowments are yet to come. In short, we have had opportunities only as we have made them. It is this ability to overcome obstacles and to make opportunities that characterizes the western man. Western surgeons are proud of the fact that, notwithstanding the many disadvantages they have labored under, they are not now accused of making up the rear guard in the surgical procession.

At the organization of the American Surgical Association in 1882 one of the leading surgeons of the day said, "In my opinion surgery has nearly reached its limits. I do not see how it can advance much beyond its present height of perfection," yet in twenty years that have elapsed since that statement was made surgery has made more advancement than in all time before. The profession has

* President's Address before the twelfth annual meeting of the Western Surgical and Gynecological Association, held at St. Joseph, Mo., December 29 and 30, 1902.

been swept by such a wave of optimism, aggressiveness and surgical furor that it behooves us to scan closely our present trend. What is there in the present tendencies of surgery that makes for good and what for ill? That the general trend is toward better things all will agree, but that there are some dangerous tendencies all must admit. It is well for us occasionally to see ourselves as others see us. To this end I wish to quote briefly from an editorial which appeared in the *Minneapolis Daily Tribune* on the occasion of Dr. Lorenz's too much advertised visit to Chicago.

Reaction from the Knife.—The brilliant operations in bloodless surgery which the Austrian, Dr. Lorenz, is conducting in Chicago and elsewhere, call attention to a distinct reaction from lavish use of the surgeon's knife which is appearing in the higher levels of the profession. It is time for a counter revolution in this direction. Tremendous impetus has been given to the use of the knife in surgery by the two discoveries of anesthesia and antiseptics. Surgeons began to carve more freely when they found a way to do it without causing torture to their victim. But their power to explore the human interior was limited by the perverse habit of dying after the operation. In many cases this was due to the secondary cause of blood poisoning, which was largely removed by the later discoveries of antiseptic surgery. Then came a perfect riot of cutting and slashing, attended undoubtedly with great benefit to the human race. It would not become laymen to say that this has gone too far, because intelligent surgery always weighs carefully the chances of death and recovery, with or without an operation. If it was a great gain for humanity to learn how to use the knife with less danger to the patient, it will be a greater gain to learn how to dispense with the knife in many cases.

While we can not endorse this editorial, there is some truth in it. Our only defense is that while we do go to extremes at times there is no greater tendency in that direction among surgeons than among any other class of men. Even newspaper men by trying cases "out of court" succeed in hanging some innocent men and assisting some guilty men to escape. Surgeons are accused of being over aggressive, but the aggressor is far less dangerous than the obstructionist, and he has the saving grace of learning something while the obstructionist never learns. Even extremists have their uses. We do not look to extremists for the best in anything, yet if it were not for them we could not know our limitations. The editor just quoted, like many medical men, has a wrong conception of conservatism. He seems to think that conservatism consists in not using the knife, when we all know that the knife in judicious hands is the greatest conservative agent at our command. True conservatism consists in doing that which will the most surely prolong human life and prevent suffering. Surgeons are more truly conservative now than ever before because they save more lives and prevent more suffering than their predecessors ever did. Surgeons should not be held responsible for the work of the would-be surgeons found in every community where surgery is being done. Their ranks are filled up with young men not yet out of their medical swaddling clothes, and with older men without experience and proper training who are seeking for a royal route to fame and fortune. Their work is at times appalling and none deplore it more than the surgeons. The time will come—and it can come none too soon for the welfare of suffering humanity and the honor of surgery—when the law will require of a man that he shall have had hospital experience and shall have shown special qualifications as a surgeon before he will be allowed to perform operations involving life and death. A diploma from the best of medical colleges is no criterion,

for not all physicians, not even all good physicians, can become surgeons.

Medical colleges are trying to turn out better educated medical men by raising their standard of entrance and lengthening their college term. There is no question but that the tendency is toward better education, but there is great room for improvement yet. The lengthening of the college term from two to four years unfortunately does not mean that the student spends twice as much time in studying the diagnosis and treatment of disease. So much of his time is taken up by laboratory work that he has very little more time to study medicine than he had when the course extended over but two years. We must not forget that we are trying to make doctors out of these young men and not embryologists and bacteriologists. We can not all be bacteriologists any more than we can all be surgeons. Much of our laboratory teaching at the present time is theoretical and of very little practical value. There is no crying need of half-baked medical men; why not extend the course to six years and limit the laboratory work to the first two? We certainly should do this or make the laboratory course a requirement for entrance to the medical course, leaving a full four years for the study of medicine. Our institutions have been spending so much money building and equipping laboratories that they have little or none left for hospitals and clinics.

We make this criticism of medical education in order that we may more consistently criticise the teaching of surgery. Our didactic teaching has improved and is still improving very materially. The didactic lecture, given alike to freshmen and seniors, is fortunately a thing of the past. It has given place to graded instruction and recitation. Our clinical teaching of surgery, however, is very faulty. The average surgical clinic has been very aptly likened to a continuous vaudeville performance. There is too much of major and too little of minor surgery. It is of infinitely greater value to a student to see a finger amputated or a fracture treated than it is for him to see an abdominal operation. The students see so much major surgery and so many brilliant results that they naturally think it is easy and that they can begin doing that kind of surgery as soon as they get out of college. This is certainly a bad tendency, but one that is easier to find fault with than to remedy. The remedy is for the medical colleges to furnish the clinician with abundance of material and with the same facilities for graded instruction that are furnished to the laboratory teachers, and to so compensate him financially that his only hope of reward is not through the advertisement he may get from his clinic. Eminent jurists and theologians are not obliged to charge their time spent in teaching to the advertising account. They have too much good sense to allow themselves to be placed in any such position. The position of the average clinical teacher is all wrong, and the humiliating part of it is that it is all his own fault. We as surgeons can fully appreciate the value of laboratory work, but as teachers we should insist that it shall supplement and not supplant the teaching of medicine and surgery. One of the great advances surgeons have made is the supplementing of clinical diagnosis with laboratory diagnosis.

The tendency now is to give the patient a more thorough and careful examination than we formerly did, making use of many scientific mechanical devices to aid us. Each year some new devices are added to our

armamentarium and old ones are being improved on. At the present time no one who is imbued with the prevalent professional spirit thinks of listening to a patient's tale of woe and then writing a shotgun prescription. On the contrary, a careful and systematic physical examination is made and the patient gets fewer drugs than ever before. This method of examination is the outcome of specialism.

The one thing that has had more to do with the advancement of medicine and surgery than any other is specialism. It stands to reason that one who devotes his whole time to one branch of the profession can do better work than he otherwise could. A specialist who has not graduated only yesterday, but who has developed from a general practitioner is certainly in a position to do better for the community and for himself than if he were to try to cover all branches throughout his professional career. One of the bad tendencies of the day is for young men to go directly from college into special work before they know to what line of work they are best adapted and before their knowledge is broad enough for good general work and while it is utterly inadequate for special work. When so many new things were added to medicine specialism became a necessity, and it in turn has developed the science of medicine to a degree that could not otherwise have been attained. As soon as men began to devote their whole attention to some one branch of the profession they became more expert in old methods and discovered many new ones. Twenty-five years ago the oculist and aurist was practically the only specialist known. Then came the gynecologist, but as long as he confined himself to the local application of nitrate of silver, to glycerin and tannin tampons and pessaries, he made very little progress. Very soon, however, he began to do plastic surgery, which led to pelvic surgery. From pelvic surgery he soon passed on up to the diaphragm and out through the abdominal wall to the breasts, when he began to lose his identity and to become a general surgeon. The consequence is that there are fewer gynecologists now than there were ten years ago. The gynecologist developed the science of abdominal surgery, for which we owe him an everlasting debt of gratitude. At the present time the bulk of most general surgeon's work is abdominal surgery. It is absurd to maintain that the surgeon who can do good work in the upper part of the abdomen can not do equally good work in the lower part, and vice versa.

Fifteen years ago there were very few specialists in general surgery. There were none in the West, and, in fact, it was not believed possible for a man to get enough surgery to keep him busy. About this time, however, a few pioneers began to realize the great possibilities of surgery as a specialty, and the consequence is that to-day we have specialists in surgery in every city of consequence throughout the land, and the more surgeons there are the more surgery there is for them to do. New fields have been entered each year and the end it not yet.

Hospitals are being established without number, and it will be interesting to note the results. Many of them being poorly equipped and poorly manned will doubtless close, but others will remain a blessing to their communities and to the profession. The good country hospitals will be helpful to the metropolitan hospitals because they will educate the country people to the hospital idea and teach them the possibilities of surgery. We will find that the more hospitals there are the more surgical cases there will be to fill them. The modern hospital, with its trained nurses, is a very essential part

of modern surgery, and the rule now quite generally adopted by surgeons that every patient requiring an operation must go to a hospital when it is possible, has much to do with advancing surgery. The people in the cities have already learned that a hospital is not a charnal house, but a harbor of safety. We find very little difficulty now in persuading our patrons to go from the finest homes to the hospital. The country people already know something of this, and through the country hospitals will soon learn more. We of the larger cities need not fear the competition of the country hospital, because much that will be done there would otherwise be undone.

A few years ago when our present technic was being developed many of the papers read were on that topic, but now we are so content with our methods that the technical paper is the exception. There is even a little tendency to criticise one who writes a paper on technic as though this subject were settled for all time, but this is wrong, for great as have been our improvements we have not yet attained to perfection. It has been suggested by a recent writer that a uniform standard of technic be established, but it is questionable whether this can ever be brought about, and if it could be done it is not desirable, for technic is the work of human hands and can never be perfect. An established standard would imply perfection which would prevent progress. The early history of antiseptic surgery was an illustration of our tendency to go to extremes. Our very elaborate technic at that time made us seem ridiculous in the eyes of unbelievers and the laity. There is a very wholesome trend now toward simplicity in technic. The best surgeons are those who have the least paraphernalia and who make the least fuss about an operation.

Strong chemicals are rapidly disappearing from our operating rooms and are giving way to soap, water, brush, boiled instruments and rubber gloves. The late Lawson Tait builded better than he knew, for when he thought he was denouncing antiseptic surgery he was really teaching us aseptic surgery. We have even learned that an operation can be conducted more satisfactorily and comfortably without flooding everything with water. There should be but one rule in aseptic surgery, viz., absolute surgical cleanliness, brought about in the simplest manner possible.

The tendency in the West is to abandon all unabsorbable buried sutures. One who becomes accustomed to catgut uses it more and more, until he finally uses it for everything but the intestines and the integument. One accustomed to it finds no objection to it.

One of the most hopeful signs of the times is the great interest surgeons take in each other's work. A spirit of kindly criticism prevails that is helpful to us all. So much good surgery is being done everywhere that it is quite the proper thing now for surgeons to visit each other and make comparisons which are bound to prove beneficial. We have always traveled East for surgical light, but at the present time there is a very respectable and rapidly increasing return current toward the West.

In conclusion: Let us continue to work so that it can not be said of us twenty years hence that we did good work for a few years and then folded our hands and said we have attained to such a height of perfection that farther advance is impossible. Let us continue to work, still admitting that there is room for advancement, not being content with our laurels until we shall have at-

tained the millennium when there will be no disease and no suffering.

Let us then be up and doing,
With a heart for any fate;
Still achieving, still pursuing,
Learn to labor and to wait.

Original Articles.

A MODIFICATION OF PANAS' OPERATION FOR PTOSIS.

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CHICAGO.

Panas' operation for ptosis probably yields better results, on the whole, than any other operation, and yet its various steps are not always clearly understood by

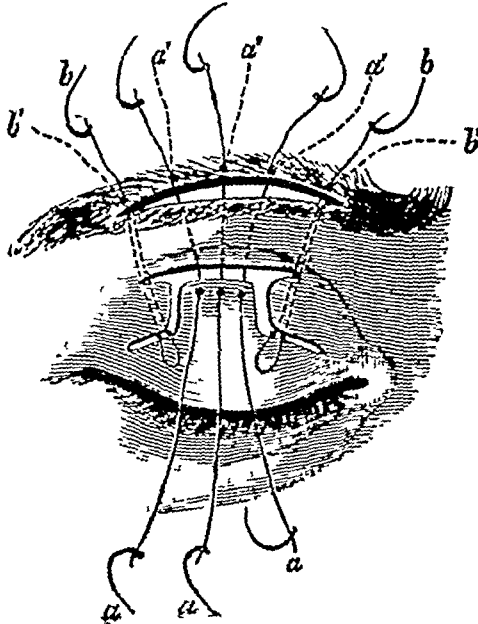


Fig. 1.—Panas' operation for ptosis. (After Panas.)

operators, and it possesses some glaring defects that have served to render it rather unpopular. It is for the purpose of clearing up these misunderstandings and

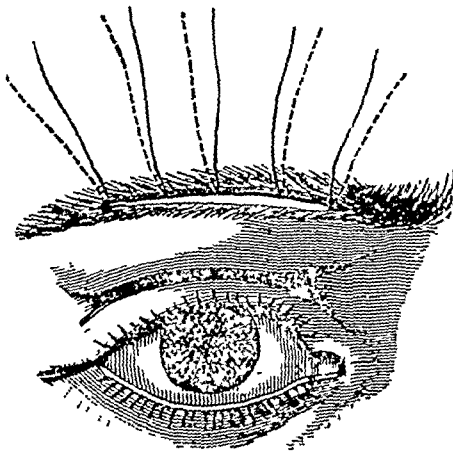


Fig. 2.—Appearance after the operation is completed. (After Panas.)

remedying the defects that I have ventured to offer this communication.

I will first reproduce the drawings usually given to clarify the written description of Panas' operation, and it will be seen that they do not entirely clear up some of the points in the ordinary description.

I think that the addition of a plain schematic drawing would better demonstrate the different steps in the opera-

tion, and for this purpose at my clinics I draw a plan like Figure 3.

The line indicated by 1 represents the first incision, which should be in the eyebrow and extend to the bone. The line indicated by 2 represents the second incision, which should be just below the eyebrow, and should extend also to the bone. The bridge of tissue between these two incisions should not be more than 5 or 6 mm. in width. The line marked 7 represents the palpebral margin of the upper lid. The line marked 3 represents a short incision in the lid at about the upper margin of the tarsal cartilage, and should be from 8 to 10 mm. long, and should pass completely through the skin. The line marked 4 represents another similar incision in the opposite angle of the lid. The lines marked 5 and 6 represent two incisions passed completely through the skin and uniting 3 and 4 with 2. While incisions 3, 4, 5 and 6 are being made, the horn spatula should be placed underneath the lid, both to facilitate the making of the incisions and to avoid accidents to the underlying eyeball. The tissue between incisions 5 and 6 should be about 15 mm. in width.

Figure 1, as given by Panas, shows all the lines, etc.,

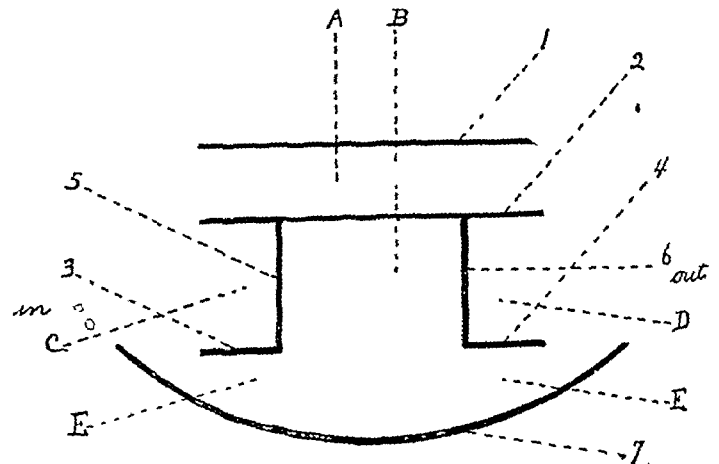


Fig. 3.—1 First incision. 2 Second incision. 3. Third incision. 4. Fourth incision. 5. Fifth incision. 6. Sixth incision. 7. Edge of upper lid. A. Bridge flap. B. Tongue flap. C. Nasal flap. D. Temporal flap. E. Palpebral flap (nasal side). F. Palpebral flap (temporal side).

to be beautifully curved in outline, but in practical work these curves are not feasible, and I believe straighter incisions can be much more accurately made, and will not detract from the efficiency of the operation.

The original drawing of Panas (Fig. 1) is misleading, as it shows the two threads in the five needle holes in the superior portion of the eyebrow incision, both coming out of the same needle hole, whereas they should be shown as coming out of separate needle holes, side by side and close together, as shown in Figure 4, which I would suggest as in every way a plainer drawing than Figure 1.

The description as given by Panas is also not explicit concerning the sutures 4 and 5, which are placed to prevent a tendency to ectropion induced by the traction effect of sutures 1, 2 and 3. These sutures should include the tissues of the lid except the skin and tarsal cartilage, and should be inserted in the spaces between the skin flaps. One of the needles of a double-needled thread should be inserted directly through the lid from within outwards, just above the upper edge of the tarsal cartilage, and pulled through, after which the other needle should be inserted through the tissues, also from within outwards, and brought out close to the first point of entrance of this suture, leaving the loop of the suture on the conjunctival surface of the lid. The lid should

be held well away from the eyeball either with the fingers or forceps during the entire placing of these sutures, so that the operator may look under the lid and see what is transpiring, and so that the needle may not injure the eyeball. The sutures should then be passed up under the bridge flap, and through the superior margin of the brow incision and firmly tied.

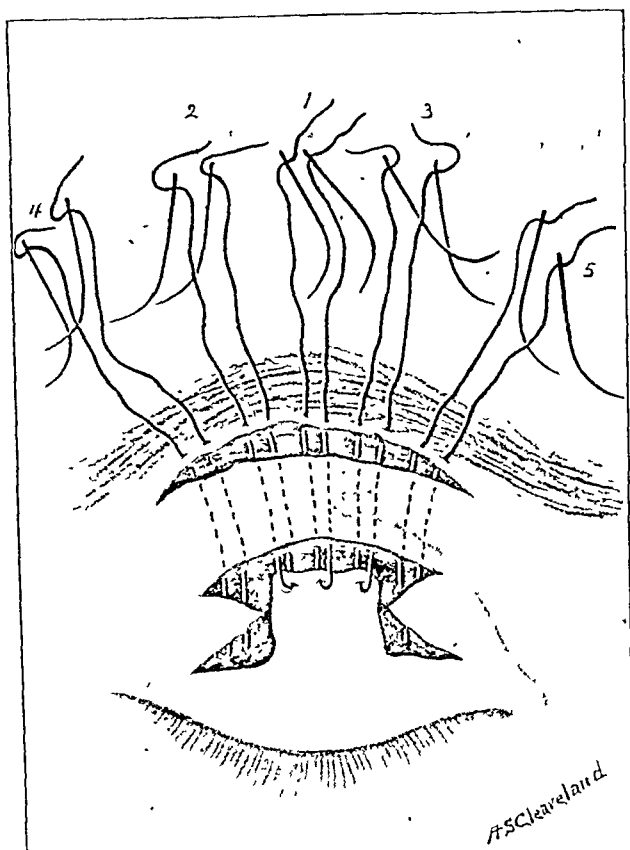


Fig. 4.—1. First suture. 2 Second suture 3 Third suture 4. Fourth suture. 5. Fifth suture

One great objection to the operation is the fact of the non-adherence between the flap marked B (Fig 3) which I will call the tongue flap, and the flap marked A (Fig. 3), which I will call the bridge flap. The upper surface of the tongue flap is unbroken skin, that of the

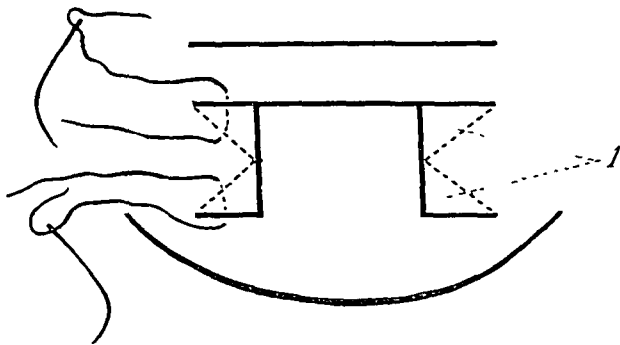


Fig. 5.—1. Corners cut from flap.

under surface of the bridge flap is connective tissue, fat, etc., and the two do not heal together, which leaves a pocket or cul-de-sac between the two for the permanent accumulation of various forms of debris, which is both unsightly and unhealthy, as well as being a distinct defect in the operation. This objection I remedy by thoroughly scarifying the skin surface of the tongue

flap by criss-cross incisions, and then removing most of the dermal epithelium by delicate forceps and scissors. This procedure is accomplished before the tongue flap is dissected from the underlying tissue, as the flap is then firm, and can be handled easier than after it is lifted. The sutures are then placed and the tongue flap drawn up under the bridge flap and tied, and in a few days perfect adhesion will take place. Another objection to the operation is the thick, lumpy appearance of the bridge flap, which never entirely disappears. This objection I minimize by making the bridge flap as narrow as possible, never more than 5 or 6 mm. in width, and also making it as thin as possible by stripping it of all possible tissue beneath the true skin.

The last objection to the operation is the two pieces of skin at the angles of the lids marked C and D in Figure 3, which pucker up and look permanently bulky

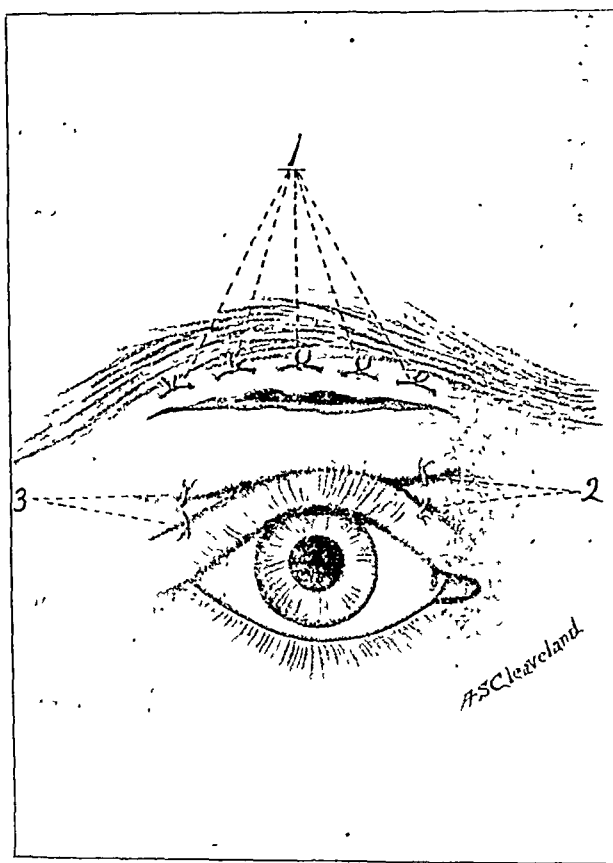


Fig. 6.—1. Sutures 1, 2, 3, 4, 5, after being tied. 2 and 3. Sutures in flaps C and D after being tied.

and unsightly. This I remedy by cutting off the corners as seen in the dotted lines of Figure 5, and then thinning the under sides of flaps C and D (Fig. 3) by removing all possible tissue except the true skin. Flaps C and D (Fig. 3) are then sutured to flaps E and E (Fig. 3) and flap A (the bridge flap) by four sutures, which makes the entire field of operation present a smooth and finished appearance and adds much to the cosmetic effects of the operation, as shown in the completed operation of Figure 6.

I have performed the operation as thus outlined a number of times, and have not failed to obtain satisfactory results.

Crystallized Wisdom on Epidemics.—In these days there are no excuses for epidemics of filth diseases; there are only explanations of them.—"N. Y. Times."

THE EXTERNAL PREPARATIONS AND THEIR THERAPY.

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While the history of the preparations embraced in the broad generalization of external preparations is of the most ancient origin, yet their evolution and differentiation along therapeutic lines is largely a matter of recent development.

Up to a comparatively recent period the fats employed for vehicles of the oleagenous preparations were selected with sole reference to their pharmaceutic properties, that is, to afford preparations possessing the most desirable physical characteristics: proper consistence, ready fusibility, etc. The earlier materia medica was especially rich in oils and fats of animal origin, the fat of nearly every creature being vaunted as having especial virtues, such notions still surviving among many peoples, as, for example, bear-grease to promote the growth of the hair; goose-grease to loosen and break up a cold; rattle-snake oil as an application for rheumatism, and many similar domestic remedies.

OINTMENT VEHICLES.

The introduction of the petroleum fats or soft paraffins, in 1870—cosmolin and vaselin—was a great advance over the rancid and otherwise often decomposed mixtures of animal and vegetable fats, mostly used before this time, and the substitution of these practically inodorous and unchangeable soft paraffins for the latter became quite general. The immiscibility with water and watery liquids of the soft paraffins was the only drawback to their more extended use, until about 1882 the purified wool-fat appeared under the name of lanolin. The peculiar property of this cholesterin, even after being hydrated, to take up its own weight of water at once attracted attention, and when its power to penetrate the skin was subsequently discovered it began, though slowly, to be recognized as a valuable medium by which systemic effects may be obtained through the skin. While the fat from wool was used by the ancients under the name of "Æsypus," to Oscar Liebreich is due the credit of presenting a pure hydrated form of it under the name of lanolin, official as *adeps lanae hydrosus*, U. S.

THERAPEUTIC GROUPING.

The at first more or less empiric use of these two fats—the soft paraffin and lanolin—of exactly opposite qualities as regards their water miscibility and property to penetrate the skin, led eventually to the grouping of the ointments and similar preparations from a therapeutic standpoint, according to the vehicle employed, substantially as follows:

1. *Epidermatic*: Non-penetrative, or non-absorptive. Protective, antiseptic. Vehicle: Soft paraffin, vaselin or petrolatum, U. S.

2. *Endermatic*: Semi-penetrative or semi-absorptive. Emollient, nutritive, astringent, etc. Vehicle: Animal or vegetable fats, oils and waxes. Lard, suet, oils of almond, olive, etc.

3. *Diadermatic*: Penetrative or absorptive. Systemic or constitutional. Vehicle: Lanolin or hydrated wool-fat.

While this classification is a generalization, its approximate correctness is apparent from the fact that a vehicle consisting of equal parts of petrolatum and lano-

lin, the respective types of the two extreme groups, has the general properties of the intermediate endermatic group. Since this vehicle does not become rancid or react with chemicals, as do the animal or vegetable fats and oils, it serves excellently for endermatic uses.

SUPPOSITORIES.

In no class of preparations has the failure to consider the general therapeutics been so apparent as in the suppositories. Since their first introduction into the U. S. Pharmacopoeia in 1870 the vehicle has been uniformly cacao-fat or theobroma oil.

While three different forms of suppositories are recognized no distinction is made as to the vehicle employed, although the necessity for such selection is generally conceded. For rectal suppositories fats undoubtedly are the best vehicle, not only because of the alkalinity of the secretions, but also because more or less penetrative or absorptive effects are desired. Cacao-fat serves this purpose probably better than any other fat. While soap is sometimes used, its effects are simply those of an irritant or solvent, as in the official glycerin suppositories. Neither is gelatin a proper vehicle for rectal suppositories, except when used instead of nutritive enemata, where other considerations supervene.

On the other hand, the secretions of the urethra and vagina are normally acid, and fats are therefore not indicated as the proper vehicle for urethral and vaginal suppositories, but water-soluble substances should be employed. Glycerogelatin answers the purpose probably better than most of the other substances employed, the only objection being that in melting it exudes and may mat the pubic hairs. By using 50 per cent. anhydrous glycerogelatin mass, a soft, readily-soluble "bougie" is obtained in which tannin and similar agents may be presented without difficulty.

The late Dr. Hay of Chicago employed a vaginal suppository of elm powder which had the advantage of ready preparation in that the suppository could be easily formed into any shape desired with the fingers.

Glycero-Massa Ulmi (Elm Suppository-Mass.)—Powdered elm bark, 10; water, 6; glycerin, 6 c.c. In the water and glycerin previously mixed dissolve the required amount of the medicinal agent, add the solution to the elm powder at once, and quickly mix and form a mass, by working the mixture in a mortar. A soft, cohesive and plastic mass results which may be rolled out, divided into the required number of parts (for the above quantity of 6) and made globular by forming with the spatula and the fingers. This operation should be done quickly, since the mass hardens in about ten minutes and can not then be readily formed. Any form can easily be made in this manner without losing its shape. In about twenty-four hours the suppositories become hard and elastic.

In a suppository the medicinal agent should be most thoroughly distributed with the vehicle, as in all similar preparations, and it is worst kind of slipshod pharmacy to use the so-called "hollow" suppositories.

CERATES.

The cerates are mixtures of fats and waxes, having a higher melting point than ointments, their firmer consistence requiring them usually to be spread on cloth and applied as dressing. They are, therefore, in the epidermatic group and comprise protective, cooling, emollient and vesicating effects. The cantharidal cerate is the most important, and when spread on adhesive plaster in such thickness as to obliterate the yellow color of the plaster cloth, when viewed through the light, it is the most effective cantharidal vesicant to be had.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Materia Medica, Pharmacy and Therapeutics, and approved for publication by the Executive Committee: Drs. A. W. Baer, A. B. Lyons and W. J. Robinson.

PLASTERS.

This most ancient form of medication has largely fallen into disrepute during recent years, owing partly to their ineligibility and uncertainty of action, and partly to the advent of more efficacious and more quickly responsive methods of treatment. The advent of the rubber plasters has also caused the lay public, which believes in "anything that will stick," to appropriate the plasters as its own sovereign remedy for all kinds of aches and pains.

Nevertheless, the plasters serve a useful purpose owing to the great range of their application, which may be summarized in the following groups:

1. *Epidermatic*: Supportive, protective, antiseptic, counter-irritant, vesicant. Vehicle: Rubber or any suitable adhesive.
2. *Endermatic*: Anodyne, astringent, alterative, resolvent, sedative, stimulant. Vehicle: Oleates or lead plaster, sometimes with resins or gum-resins.
3. *Diadermatic*: For constitutional or systemic effects. Vehicle: Lanolin or plaster-mull.

The vehicle for the commercial rubber plasters is chiefly India-rubber, or caoutchouc, with sufficient orris powder and sometimes gum-resins, to give it the proper consistence and retain its adhesive properties. For epidermatic purposes this serves admirably as a convenient and fairly stable adhesive, but since it lacks penetrative properties in any considerable degree, it should not be used for endermatic effects, such as are sought from drugs like belladonna. The suggestion to increase the efficacy of rubber belladonna plaster by the addition of boric acid would seem also to support the view that such anhydrophile mixtures do not penetrate into the skin, as has also been clinically demonstrated.

For endermatic effects the oleates, as represented by the well-known lead plaster, are the best vehicle, since they penetrate into but not through the skin, and thus have the desired effects without producing any systemic or constitutional results. The objection to the old-style plasters with a lead-plaster vehicle, that they are impaired by age, become brittle and lose adhesiveness, has been met by improved methods of manufacture affording an adhesive plaster which retains its flexibility and through the admixture of a little rubber adheres without being artificially warmed.

For diadermatic or systemic effects the vehicle for plasters should be animal fat, such as lard or suet with waxes, or preferably mixtures of these with lanolin, substantially like the plaster-mulls of Unna. The official mercury plasters, at present made with lead plaster and gum resins, should be prepared with this lanolin vehicle.

OLEATES.

The official oleates are liquid or semi-solid mixtures of the respective oleates in oleic acid in excess which renders them often ineligible. The true oleates, or so-called "dry oleates," are preferable, but these should be diluted with a proper vehicle before use.

As indicated above, the oleates do not penetrate through the skin, which becomes self-evident when the constant use of soap (sodium oleate) is considered. While there is plenty of evidence that the natural oleates, the oils of olive and almond, also the oleopalmitates and stearates, lard, butter, etc., in which the respective acids are linked with the radical glyceryl, penetrate through the skin and are absorbed in the system, the artificial compounds of these acids with the metals and alkali bases, known respectively also as insoluble and soluble soaps, are not absorbed through external use. If it were otherwise, what an inducement for the people in "the

farther Mediterranean" to consume at least some portion of their daily rations of olive oil in the form of soap.

LINIMENTS.

The value of liniments depends on the degree they penetrate into and through the skin, only one official liniment being protective, that of lime, the well-known Carron oil, so called from the factory town in England where the mixture of linseed oil and lime water originated as an application to burns. While the effects resultant from such liniments as consist of oils or soap solutions are supposed to be largely influenced by the mechanical rubbing or massage in their application, solutions of medicinal agents, such as belladonna, camphor, etc., in alcohol or other volatile liquids, are no doubt more effective when they are applied by means of an occlusive dressing as shown by the extended researches of Dr. Thos. F. Reilly,¹ presented to this association in 1900.

Several modifications have come into recent use: the saponimenta or liquid medicated soaps, which may be prepared extemporaneously from the official soap liniment or from the semi-solid form, linimentum saponatum camphoratum of the National Formulary or solid opodeldoc.

COLLODIONS.

The collodions, owing to the impervious film of pyroxylin or colloxylin which they leave on evaporation of the volatile solvent ether-alcohol, suggest a wider employment, and as being well adapted for applications on small areas, when lasting effects are desired of tannin, iodine, iodoform and similar derivatives. The official list may well be extended to include those of the National Formulary.

The linimenta exsiccantia, or the so-called drying liniments, have somewhat similar uses, except that they do not form so impervious a coating as do the collodions, the vehicle consisting of mucilages of starch, dextrin, tragacanth or albumin. The following is a type, which may be medicated as desired with zinc oxid, chrysarobin, iodoform, ammoniated mercury, ichthyol, salicylic acid, etc.:

VERNICIUM ICHTHYOLI ALBUMINATUM, UNNA.

R.	Ichthyol sulph. ammon.	3v	20
	Starch, powder	3v	20
	Distilled water	3xv	60
Mix with:			
	Liquid egg-albumin, recent	m. xii	75

MODERN DERMATOLOGIC PREPARATIONS.

Pastæ (Pastes—Dermatologic—Lassar, Unna, etc.)—These are mixtures of starch, dextrin, zinc oxid, sulphur or calcium carbonate, made into a paste with glycerin, soap or fat, such as petrolatum or lard, medicated with antiseptic or astringent agents. The following are important examples:

PASTA ZINCI, LASSAR (ZINC-SALICYL).

R.	Acid salicylic	gr. xxx	2
	Zinc oxid, starch, each	3vi	24
	Petrolatum, white	3xiiss	50

PASTA RESORCINI (MITIS), LASSAR.

R.	Resorcin	3iiss	10
	Zinc oxid, starch, each	3vi	25
	Petrolatum, liquid	3x	40

PASTA NAPHTHOLI, LASSAR.

R.	Naphthol	3iiss	10
	Sulfur, pp	3xiiss	50
	Petrolatum		
	Soft soap, 5â	3v	20

PASTA ZINCI MOLLIS, UNNA.

R. Zinc oxid., calc. carb. pp., each.....	3vi	24|
Mix these powders and incorporate gradually:		
Lime liniment	3xiiss	50|

PASTA ICHTHIYOLI, UNNA.

R. Ichthyol, sulf. ammon.	3iiss	10|
Distilled water, glycerin, dextrin, each..	3i	30|

PASTA ZINCI SULFURATA, UNNA.

R. Zinc oxid.	3ss	15|
Sulfur, pp.	3iiss	10|
Acid silicic (kaolin)	gr. lxxx	5|
Benzoated lard	3xviiss	70|

PASTA DEXTRINATA.

R. Dextrin	3xxv	100|
Glycerin, distilled water, each	3xxv	100|
Dissolve by heat, add water to make 300 gm.	3x.	

This is a general vehicle for many medicated pastes used in dermatology.

PASTA KAOLINI. GLYCEROPLASMA KAOLINI.

R. Kaolin, elutriated and dried	3xiiss	50|
Glycerite boroglycerin	3iiss	10|
Methyl salicylate, thymol, each	gr. i	5|
Glycerin, to make	3xxv	100|

Or sufficient to make a semisolid paste by thorough levigation.

Stili (Stili Dilubiles, Unna. Pencils).—Pencils for the direct application to the skin of medicinal agents—antiseptics, astringents, anesthetics, etc. These agents are dissolved or mixed with a paste consisting of mucilaginous or saccharin vehicles, starch, dextrin, tragacanth, sugar, etc., rolled out into sticks about 1/5 inch (5 mm.) in diameter and 2 inches (5 cm.) in length, dried at ordinary temperature on parchment paper and wrapped in tin-foil.

Gelatinæ Glycerinatae (Glycerogelatin).—Gelatin mass as a vehicle for suppositories and other external applications is used as follows:

GLYCEROGELATINA ACIDI SALICYLICI, 10 P. C., UNNA.

R. Gelatin	3iiss	10|
Glycerin	3viiss	45|
Distilled water	3ix	35|
Acid salicylic	3iiss	10|

GLYCEROGELATINA IODOFORMI, 10 P. C., UNNA.

R. Gelatin	gr. lxxx	5|
Glycerin	3v	20|
Distilled water	3xvi	65|
Iodoform	3iiss	10|

GLYCEROGELATINA ZINCI DURA, UNNA.

R. Gelatin	3iiss	15|
Distilled water	3xiiss	45|
Glycerin	3vi	24|

To this add gradually the following, levigated:

Zinc oxid.	3iiss	10|
Glycerin	3iiss	15|

Then mix with it enough water to make 100 gm. The soft form (Glycerogelatina Zinci Mollis) is prepared in the same way by using 10 gm. gelatin.

These glycerogelatins should be freshly prepared when wanted. They may be run out in molds, oiled with cacao-fat. The zinc gelatins may be used as vehicles for ichthyol, resorcin, chrysarobin, etc. When to be applied, they are melted and then penciled on the affected part.

Gelatinæ Medicatæ (Lamellæ, Eye Discs).—Disks of gelatin are made with some glycerin, containing alkaloidal salts for insertion and solution in the eye. They are applied to the eye with a pencil. The following is an illustration:

GELATINA ATROPINÆ SULPHATIS. 1-10 mg.

R. Gelatin	3vi	25|
Distilled water	3xxv	100|
Glycerin	gtti vi	4|
Atropine sulphate	gr. iss	1|

For 1,000 discs from a plate 7x12 inches (18x30 cm.).

Salve Mull.—Under the name of “salbenmull,” salve mulls, or steatines, ointments have been introduced of higher fusibilities spread on porous cloth, gauze or “mull” by Dr. Unna. These are mixtures of suet with lard and sometimes wax, in such proportion as to afford a consistence adapting them to being easily spread when heated without melting or running when applied to the body. They are intended chiefly for epidermatic effects, protective and antiseptic, but also for endermatic, astringent and resolvent action.

The mulls serve a distinct purpose in dermatology, since owing to the porous character of the fabric employed, they permit ready evaporation and thus prevent maceration of the epidermis which usually occurs from the prolonged application of more occlusive dressings. Their value as a form of application in intractable skin diseases has therefore been recognized by the highest authorities in this special branch of medical practice. The following are some of the most largely used:

UNGUENTUM EXTENSUM HYDRARGYRI CHLORIDI CORROSI. 2 p. mill.

R. Mercuric chlorid	gr. iii	12|
Alcohol	m. lxxx	5|

This solution is incorporated with the following mixture previously fused:

R. Benzoated lard	3iv	5|
Benzoated suet	3xxiiss	90|

UNGUENTUM EXTENSUM HYDRARGYRI CHLORIDI MITIS, 10 P. C.

R. Calomel	3iiss	10|
Benzoated lard	3v	20|
Benzoated suet	3xviiss	70|

STERILE SOLUTIONS.

While many pharmacists are careful in making solutions, such as injections, eye washes, gargles, lotions, etc., the majority are not, and the result has been that many leading specialists in eye diseases, for example, prepare and dispense their own solutions, asserting that only through such procedure can they be assured of complete asepsis. The use of compressed tablets for hypodermic solutions has become general, chiefly because of their convenience and portability, but no doubt also from the fact that through their use solutions may be prepared extemporaneously with fresh water as pure as may be obtainable. In the larger cities where the water supply is more or less infected, the general practitioner no doubt is often compelled to use the service water instead of pure water, and the employment of the tablets must therefore in many instances be a source of infection. Weak, 1 per cent. water solutions of the alkaloidal salts: atropin, morphin, cocain, pilocarpin, also ergotin, permit germ growth, while concentrated solutions, i. e., 10 per cent. solutions of cocain and quinin, are easily kept germ-free. Solutions in germicidal solvents: alcohol, ether; iodine, mercuric chlorid and strong phenol solutions, are not admissible, but almond oil may be used for camphor and glycerin for iodoform. Carbolic acid—one drop for 160 minims (10 c.c.)—is the safest and altogether the best preservative for the water solutions.

Whether or not it may be regarded desirable to admit formulas for hypodermic injections into the U. S. P., there is no doubt that some general directions or formula should be introduced for sterilization. Not only for hypodermic injections are sterile solutions necessary, but also for ordinary injections, lotions or washes, nebulæ or sprays, and especially for collyria.

Dr. Fütterer, a most careful observer, reports several instances of the most serious results due to careless preparation of solutions for hypodermic use, and regards the

official recognition of a process for sterilization as of the greatest importance, since it would enable the physician to specify its employment for the preparation of solutions, etc. It would, moreover, direct the attention of pharmacists to the necessity for care in these preparations and would afford him at once an authoritative method insuring the best results.

INJECTIONES HYPODERMICAE. BR. PIL. '98.

These solutions are prepared by dissolving the medicinal agent in distilled water which has just been boiled and allowed to cool. The antiseptic agents in the cocain and ergotin solutions are added before the medicinal agents are dissolved.

INJECTIO HYPODERMICA.

R.	Apomorphin hydrochlorate	gr. iss	1
	Ac. hydrochloric dil.	min. iss	1
	Distilled water	min. clx	10
R.	Cocain hydrochlorate	gr. xvi	1
	Ac. salicyl.	gr. 1/4	015
	Distilled water	min. clx	10
R.	Extract ergot	gr. clx	10
	Phenol	gr. v	3
	Distilled water	3v	20
R.	Morphin tartrate	gr. lxxx	5
	Distilled water	3xxv	100

The apomorphin and ergot injections are directed to be recently prepared.

ANTISEPTIC GAUZE.

Schimmelbusch, director of Bergmann's clinic in Berlin, states (1893) that moisture is one of the essentials for germ life, while "dryness" is one of its greatest enemies, and therefore dry dressing is always preferable to wet, except where the wound secretion is viscid and purulent and where the antiseptic material is employed for packing deep or incised wounds. It seems that the majority of surgeons prefer dry dressing for aseptic wounds, but wet or moist dressing for septic wounds, such as result from great laceration, etc. This question would go entirely beyond the scope of pharmaceutical discussion and is presented only to demonstrate the necessity for a distinction between wet and dry gauze and surgical dressings. While under the circumstances it may be inadvisable to recognize antiseptic gauze in the pharmacopeia, the admission of aseptic gauze would be highly desirable, either simply defined as to its character and properties, as the "tela depurata" in the German pharmacopeia and also "gossypium purificatum" in the U. S. P., or preferably by giving directions for the purification of the commercial gauze, as is done in the French codex by a process like the following:

CARBASUS ASEPTICUS.

Gauze of the required weight and mesh is boiled in water for 10 to 15 minutes, expressed, and washed two or three times in cold water. The expressed gauze is then allowed to macerate in solution of chlorinated soda for one-half hour, pressed and macerated in water containing 1 per cent. hydrochloric acid, rinsed in cold water several times, pressed, and dried in a closed vessel or sterilizer.

The gauze is quickly formed into rolls of the required dimensions and immediately transferred to sterile receptacles, preferably of tinned iron which are hermetically sealed.

DISCUSSION.

DR. A. W. BAER, Chicago—Only yesterday I went into a physician's office in this place and saw the most complete outfit that I have ever seen. Here were all forms of apparatus for applying electricity, galvanic, faradic and static, some of which the owner would not in all probability use once a month. It occurred to me that if the pharmacist had these appliances,

more especially in the smaller towns of 1,500 or 2,000 inhabitants, he might thus be of much assistance to the physician and keep himself occupied. Drugs are now only a part of the means for treating disease; and at the present day the large pharmaceutical manufacturing houses supply nearly all the preparations, to say nothing of the proprietary drugs unfortunately prescribed, thus doing the work of the pharmacist, supplanting him in his legitimate occupation.

GENERAL PUERPERAL SEPTICEMIA TREATED BY INTRA-ABDOMINAL IRRIGATION WITH NORMAL SALINE SOLUTION; RECOVERY.*

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A number of cases have been reported in which the abdominal cavity has been subjected to irrigation for puerperal sepsis, with indifferent results; but the accompanying report is unique, so far as I am able to determine, on account of the length of time the irrigation was practiced, the effect of the irrigation on the kidneys and peritoneum, and the ultimate recovery of the patient without the ordinary sequels of septic peritonitis.

The patient was a French woman, aged 24, unmarried, secretary to a woman of considerable wealth. She became pregnant during the latter part of August, 1902. During October and November she made frequent attempts to produce abortion by means of various drugs, hot-water vaginal douches and the like, but unsuccessfully. Early in December a middle-some woman friend initiated her into the mysteries of instrumental procedure, and during the evening of December 9 she inserted an ordinary wooden penholder into the cavity of the womb and allowed it to remain there until the following morning. The membranes were not ruptured by this maneuver, but it was followed by the appearance of considerable blood, undoubtedly from a wound of the endometrium.

Abortion occurred during the afternoon of the 10th. The girl remained in bed until the next morning, when she arose, dressed, and resumed her usual duties about the house. I was summoned to see her at midnight, December 16. She had then been confined to bed two days. I found her temperature to be 104.4 F., her pulse rate 120, and her respiration rapid and shallow. She was somewhat delirious. Her abdomen was greatly distended, and was sensitive to the touch. The uterus was enlarged and soft, and the lochial discharge was scanty in amount and very offensive. From the housekeeper I learned that she had had several protracted chills, had vomited a number of times, and, to the best of the housekeeper's knowledge, had urinated but once during the previous twenty-four hours.

I catheterized her, and drew off all the urine the bladder contained, about four ounces. Later examination of the specimen demonstrated a specific gravity of 1.031, numerous hyaline casts, and a considerable amount of albumin. I may state here that a blood examination the following day showed the presence of almost innumerable streptococci, while the uterine scrapings developed streptococci and staphylococci in great numbers.

I flushed out the uterine cavity with two gallons or more of hot water, and, under very superficial chloroform narcosis, gently curetted it with a broad curette, taking great care not to abrade the endometrium. Considerable foul-smelling placental tissue and blood-clot were removed in this way, and the cavity was again copiously irrigated, this time with a 1 per cent. solution of lysol. I then introduced a suppository containing one dram of iodoform, fifteen grains of starch, and glycerin into the uterus, and packed that cavity and the vagina lightly with iodoform gauze. Nearly a quart of hot saline solution was then slowly introduced into the bowel, but the retention

* Read before the Polyclinic Clinical Society.

of even a small quantity of the fluid caused the patient so much pain that the enteroclysis was not persisted in. Meanwhile, I had opened the median basilic vein of the left arm and withdrawn about eight ounces of blood. This was replaced by about eleven ounces of hot normal salt solution. Marked improvement in the patient's pulse and respiration was at once manifest. Her body was then sponged with tepid water and alcohol, cloths wrung out in ice water were applied to her head and abdomen, and she was again catheterized. Two ounces of urine was obtained. A rather free, loose bowel movement had resulted from the attempt at enteroclysis. It was my intention to practice continuous irrigation of the bowel with the salt solution, but the patient complained so bitterly when the procedure was attempted that I desisted.

At 11 o'clock the next day, December 17, her temperature was again 104 F., having dropped during the early morning, after the infusion, to 103; her pulse was still 120, her breathing was rapid, and coma was developing. Only seven ounces of urine had been obtained by catheter. Subcutaneous infusion of saline solution was resorted to, the sites of the injections being the anterior border of the right axilla and under the left breast. The uterine and vaginal dressings were removed and a second iodoform suppository was introduced into the uterus, both cavities again being packed. The posterior vaginal fornix was markedly distended, owing to the presence of fluid in the peritoneal cavity. Absorption from the cellular tissue was extremely slow, although the patient showed temporary improvement after the injections were begun. Enteroclysis was again practiced, but with very unsatisfactory results.

I had intended to open the posterior cul-de-sac and pack the pelvis with iodoform gauze, but the grave condition of the patient, especially the almost complete cessation of kidney function, appeared to preclude all hope of success attending this procedure. The approximate quantity of urine passed during thirty-six hours had been nineteen ounces.

It then occurred to me that thorough irrigation of the entire abdominal cavity with normal saline solution might accomplish several things: first, remove the collection of serum, which undoubtedly already was infected by streptococci; second, through absorption by the most extensive lymphatic system of the body, the kidneys would be more quickly and radically influenced; and, third, the general agglutination of the peritoneal surfaces as a result of the inflammation might, to a certain extent at least, be prevented.

Digitalin, strychnin and whisky had been injected hypodermatically at intervals since the night before. Several gallons of normal saline solution, prepared according to the formula of Locke, containing sodium chlorid, 3 iiss; calcium chlorid, gr. 3¾; and potassium chlorid, gr. iss to the quart of sterilized water, was prepared and kept at a temperature approximating 110 F. A four-quart fountain syringe and tube were sterilized by boiling. The patient was given a few whiffs of chloroform, and I made a two-inch incision into the abdominal cavity midway between the umbilicus and pubes. A rubber pad was placed under her to catch the overflow, and the tube of the syringe was inserted through the opening as far as possible into the pelvis.

For one hour the solution was permitted to flow into the cavity without intermission. Several times during this period the patient was turned on her side, and once on her abdomen, and pressure was made on her flanks to facilitate the exit of the fluid. At first, when this was done, the fluid returned was of a yellow tinge and contained many lymph flakes, but later it came away perfectly clear. Twenty minutes after the irrigation was begun ten ounces of urine of a specific gravity of 1.024 was obtained by catheter, and fifteen minutes later, six ounces. At the end of the hour her temperature had dropped to 102.6 F., her pulse rate to 110, she was in a profuse perspiration, and her mental condition had greatly improved. In all, forty ounces of urine had been drawn from the bladder, the last being of a specific gravity of 1.013. Five ounces of whisky had been given by the mouth. At one time syncope appeared to be imminent, but was averted by raising the foot of the bed to the level of a chair seat.

At 10 o'clock at night the irrigation was repeated for half an hour. A self-retaining catheter had kept the bladder drained, and forty-eight ounces of urine had been collected. The bowels had moved freely twice. At midnight her temperature was 102 F., and her pulse rate 116. A third irrigation was practiced the following morning, again for half an hour, and at three-hour intervals until 1 o'clock the next morning the cavity was filled with the saline solution. The next day, December 19, I closed the abdominal wound with stitches under cocain anesthesia. Her temperature then was 100.4 F. and her pulse rate 100. From 10 o'clock on the night of the 17th until noon of the 19th 210 ounces of urine were collected by catheter.

On December 20 her temperature and pulse rate were practically the same as on the day before, but her general condition had greatly improved. By December 23 the abdominal tenderness, except in each iliac region, had almost disappeared, the lochial discharge had increased in quantity and had ceased to be offensive, and all signs pointed toward recovery. On December 25 she had a decided increase of temperature during the afternoon, but this yielded readily to a moderately large dose of quinin. Intrauterine suppositories, each containing 20 grains of iodoform, were employed daily, and the uterus and vagina were lightly packed with iodoform gauze from December 18 to 22.

The patient was allowed to sit up January 4, and February 1 I examined her at my office. I found the uterus to be in good position and freely movable, but enlarged and somewhat sensitive to the touch. Both ovarian regions were sensitive, and the left ovary was enlarged. I could discover no evidence of pus foci in either broad ligament or elsewhere. Her bowels were constipated, but movements were unaccompanied by pain. The usual sequels of peritonitis appeared to be entirely absent.

In reviewing the line of treatment adopted in this case a number of pertinent queries are in order.

First.—Was there not danger of "drowning" the patient by introducing such great quantities of fluid into the abdominal cavity? I confess that I feared this might be the outcome, and had the kidneys not begun to functionate almost immediately after the irrigation was begun would have discontinued it at once.

Second.—Could not the same favorable result have been attained by intravenous infusion? So far as influencing the general systemic infection was concerned, I unhesitatingly reply in the affirmative, the opinion being based to some extent on recent reports of *lavage du sang* in streptococcic infection with a solution of formalin. In the cases reported, however, I believe that the favorable outcome was due to dilution of the poison in the blood current, and not to any germicidal influence exerted by the contained drug. The use of normal salt solution, I feel sure, would have been attended by as good results.

With regard to the attendant peritonitis, it undoubtedly was the local action of the saline which cut short the inflammatory process and which apparently prevented adhesion formation. I am able to explain this action only on the theory that, as streptococcic infection having the uterus as a starting point spreads to surrounding structures especially through the medium of the lymphatics, and as saline solution in the peritoneal cavity, as elsewhere, is primarily absorbed by the lymphatic system before entering the blood current, the consequent attenuation of the toxins almost at the point of origin would necessarily follow. Then again, while the primary effect on the blood vessels of hot water, that is, of water at a temperature ranging from 107 F. to 120 F., is to cause dilatation, and consequent engorgement, through the governing nerve mechanism, the secondary effect is that of contraction and cessation of congestion. As congestion is a natural concomitant of irritation, or

inflammation, the effect produced by its disappearance is obvious. While this explanation appears plausible, I am compelled to ignore the fact that the peritonitic inflammation in this case was of streptococcic origin, and consequently of a type which would be the least likely to yield to any form of treatment.

As regards the nonformation of adhesions, it is natural to suppose that the inflammation of the peritoneum being held in abeyance and the surfaces being separated by the fluid, no opportunity would be afforded for such adhesions to occur.

Third.—Was there not danger of over-stimulating the kidneys? This factor was before me during all the time the treatment was being carried out. The conditions under which the infusions were given made it impracticable to measure the quantity of fluid administered, and I have no means of knowing even the approximate amount absorbed. The urine collected was carefully measured at frequent intervals, and it was evident that the flow from the kidneys was almost constant from the beginning. It also occurred to me that such long exposure of the intestines to the action of water at a temperature of 110 F. might have a deleterious effect, but such did not prove to be the case.

It is to be regretted that bacteriologic examinations of the blood were not made at intervals subsequent to the one made after the venesection. Two specimens were obtained for this purpose, but, owing to an error, were lost.

I am inclined to think that the satisfactory outcome was in part due to the character of the fluid employed. Dr. Harvey Cushing has called attention to the fact¹ that a solution containing 0.6 per cent. of sodium chlorid, that commonly employed, should not be regarded as a normal physiologic salt solution. He says:

As a matter of fact, this is a most misleading designation, if we mean to imply by the term a fluid which is isotonic with the body fluids, and thus one that may be used with impunity in large amounts to replace directly in the circulatory system the loss of normal blood serum. A 0.6 per cent. salt solution is, in the first place, sufficiently hypotonic to lake the corpuscles perceptibly if used in sufficient quantity and, furthermore, the recent observations of Loeb and his pupils have demonstrated the actual toxicity toward cellular activities of the pure sodium chlorid solution, that is to say, when uncombined with other salts. . . . Sidney Ringer, years ago, through an accidental observation, discovered the fact that minute doses of calcium and of potassium salts, when used in combination with the usual percentage of the sodium salt, made a solution possessing a much more beneficial effect in conserving the activity of an isolated heart than the sodium solution when used alone. Thus, for the first time, was pointed out the antagonizing action of small amounts of calcium and potassium toward the toxicity possessed by the single sodium ion, and thereby was given the first indication of the necessity of combining salines in order to obtain a more perfect infusion solution. . . .

There can be no doubt that the pure sodium chlorid solution alone may, in certain ways, be injurious from its toxic effects; that, furthermore, a solution of the single salt, as weak as the 0.6 per cent. commonly employed, has a hemolytic effect on the red corpuscles. The desirability, therefore, of administering a fluid which shall be as nearly as possible isotonic with the blood—that is, shall have a molecular concentration corresponding to that of the liquor sanguinis—is evident.

381 West End Avenue.

1. "System of Physiologic Therapeutics," vol. ix, pp. 287 *et seq.*

Heat relieves the pain of inflammation, but increases that of suppuration. This is a valuable diagnostic aid in appendicitis.—"Med. Fortnightly."

FISTULA BETWEEN THE GALL BLADDER AND THE STOMACH.

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The cause of fistula between the gall bladder and stomach is primarily cholecystitis with formation of one or more gallstones, which by irritation cause inflammation resulting in plastic peritonitis with adhesions to the surrounding structures. The gall bladder contracts and its walls become thickened and friable. The constant pressure causes the stone to produce an ulcer which develops into a fistula. This is Nature's cure, and may also be attended by no new symptoms or the previous ones may be relieved, especially if the stones pass into the stomach and if there is no obstruction in the cystic duct and the adhesions are not numerous enough to cause trouble.

A cholecystico-gastric fistula is relatively rare, the operative cases recorded, as far as I can find, being four in number. The following table affords information as to the varieties of fistulae resulting from cholecystitis and their frequency in recorded cases taken chiefly from Courvoisier:

Fistulae between the bile ducts themselves.....	8
Fistulae between the bile ducts and retro-peritoneal tissues....	4
Fistulae between the bile ducts and the stomach.....	12
Fistulae between the stomach and the liver.....	4
Fistulae between the stomach and gall bladder.....	8
Fistulae between the bile ducts and the duodenum.....	108
Fistulae between the gall bladder and the duodenum.....	93
Fistulae between the gall bladder and the jejunum.....	1
Fistulae between the gall bladder and the ilium.....	1
Fistulae between the bile ducts and the colon.....	50
Fistulae between the gall bladder and the colon.....	49
Fistulae between the common bile duct and colon.....	1
Fistulae between the bile ducts and urinary passages.....	6
Fistulae between the bile ducts and the thoracic viscera.....	10
Fistulae between the bile ducts and the abdominal wall.....	184

Adopting Mayo Robson's statistics, out of a table of 10,866 autopsies made by Roth, Schroeder and Schloth, biliary fistulae occurred 43 times. Fistula between the gall bladder and stomach was found only once. In general the cases of such fistulae between the gall bladder and stomach give no symptoms, if any, none other than those of cholecystitis or cholelithiasis. Fistulae between gall bladder and stomach are not always due to gallstones. Murchison records a case in which there was a fistulous opening between the dilated bile duct in the liver and the stomach. In this case, which was one of cancer associated with impaction of gallstones in the common bile duct, the bile flowed through three or four rounded orifices in the interior wall of the stomach, which communicated with the dilated bile ducts and superficial portion of the liver. This was evidently the source of the bile found in the stools during life.

Cancer of the gall bladder has been known to invade the stomach and thus bring about fistulous communication by ulceration. Ogle reports a case where the perforation of a simple ulcer ventriculi into the gall bladder caused a fistula.

Nichols, in an admirable paper, reports the case of a woman aged 85 dying two weeks after having an impacted fracture of the femur. At autopsy eight hours after death the stomach was found almost empty. The stomach walls were atrophied. The stomach was long and fusiform. The gall bladder was adherent to the stomach one-half inch from pylorus. A fistula between the gall bladder and stomach was found large enough to admit a small probe.

Mayo Robson mentions two cases, one of probable diagnosis, the patient having vomited gallstones, the other an operative case, where a fistula was found and adhesions separated. The edges of the fistula were pared

and closed with two rows of sutures; while the opening in the gall bladder was utilized to remove the gallstones and afterward to allow drainage. The patient made an excellent recovery and is now in good health.

Kehr, who has reported a series of 409 abdominal sections on account of assumed or acutally present cholelithiasis, with 3 3/10 per cent. mortality, mentions one case of gall bladder stomach fistula found in a patient where he drained the common bile duct; later a gastro-enterostomy was done, the patient dying eight days afterwards, unfortunately, of cholemic hemorrhage. He says:

A fistula between the gall bladder and stomach may, for example, develop entirely without symptoms, and only rarely will we be able to diagnosticate fistula of the gall bladder and stomach. But in most instances we will make the diagnosis not before or during the formation of the fistula, but first, as a rule, after it. This is incidentally remarked, also, quite well, for in general it is wrong to disturb the procedures of a natural cure. If stones are vomited, then one may not yet say that they have reached the stomach through the unnatural fistula. Just as easily as bile flows backward through the pylorus, even as easily can small stones come into the stomach and be vomited. In case of the vomiting of a large stone, the suspicion of a fistula between the gall bladder and the stomach is justified.

Oschner mentions one case of perforation of gall bladder into stomach. Naunyn, in statistics taken from Courvoisier, cites eight cases of cholecystico-gastric

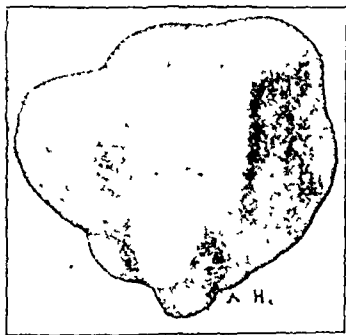


Fig. 1.—Gallstone (natural size). This stone is irregular in outline, is in no way faceted, indicating in a general way that the gall bladder contained no other stones. One can hardly imagine a stone of this size and shape escaping into the duodenum via the common duct and further, examination of the common duct at the time of operation did not show any thickening or the presence of adhesions as we would naturally expect had such a stone at one time lodged in the duct.

fistulae. Murchison gives twelve instances in which gallstones were vomited, but only one of these cases, namely, that reported by H. Jeaffreson, was proved by autopsy to result from gastro-cholecystic fistula. Cruveilhier narrates a case where the fistula between the gall bladder and stomach was found plugged by a gallstone. Oppolzer describes one in which the fistula was close to the pylorus. Frerichs, quoting Baille and Weber, refers to two cases.

The following case which I have to report of Mrs. M. of Altoona, Pa., was diagnosed by her family physician, Dr. E. E. Neff, through whose kindness I am able to present the following history:

She is 53 years of age, has had four children, the youngest of which is aged 22. This woman has had symptoms of gallstones since the birth of her last child. She has had colic from time to time during this period. Five years ago she had an attack of typhoid fever, being ill ten weeks. Dr. Neff saw her for the first time Oct. 21, 1899, in an attack of cramp, with all the symptoms of gallstone colic. By the free use of cathartics and turpentine stupes the patient was relieved until Dec. 27, 1899, when he was again called and found her in an attack more severe than the former one. The pulse was 96, temperature 99, respirations 20, and the abdomen

was somewhat distended, tense, tympanitic, and there was apparently entire cessation of peristalsis. A mass could be felt over the region of the gall bladder, giving pain on pressure and causing nausea, as though an edged instrument was being forced through the back.

December 28 the treatment was the same as in the former attack. The symptoms continued, abating for a short time and then coming on as severe as ever. The temperature and the pulse were the same. In the morning a high enema of glycerin was given; in the afternoon a large enema of white of egg and turpentine was administered, with some relief.

December 29 there was no change in the condition. A high enema of sweet oil and water was given with no apparent effect. About 8 p. m. a second enema of sweet oil was given; flatus now suddenly escaped with a report that could have been heard in the adjoining room. Peristalsis now started, and the symptoms gradually abated. The patient passed about 75 to 80 gallstones. The patient had had eructations of gas and bile in its purity. The abdomen became flaccid; the tympany disappeared. The pulse was 100, temperature 99, respirations 24. The patient had a restful night. December 31 the patient feels fairly well, there was some tenderness over the entire abdomen, more especially over the pyloric end of the stomach, which gave pain when palpated. The patient expectorated bile continually. Magnesium sulphate and olive oil were administered to keep the bowels moving.

Jan. 1, 1900, at 2 a. m., the patient had a return of the cramp and passed 97 more gallstones. The pain subsided immediately, and she felt entirely relieved. About two hours later she complained of a stoppage in the rectum and, on examination, Dr. Neff found a large stone which had lodged there (Fig. 1). This was easily removed with long forceps.

The patient steadily improved in strength, the bowels, however, continued to be very sluggish, and she complained of a burning sensation in the stomach. Operation was advised and insisted on repeatedly, but the patient flatly refused surgical interference. Any sort of food, predigested or otherwise, which was taken into the stomach gave pain as soon as it touched the stomach walls. The raising of bile was more marked at times, seeming as though the gall bladder had filled to the opening in the stomach, overflowing and causing nausea, expectoration and wretching, also causing the abdominal muscles and tissues around the gall bladder to contract and force most of the bile out. Dr. Neff said that the following symptoms caused him to make a diagnosis of a fistulous opening between the gall bladder and stomach:

1. Eructations of bile and gas from the stomach.
2. The tender spot persisting in the region of the pyloric end of the stomach.
3. Continuous obstinate constipation, which looked as though the lubrication were being removed by some other way—namely, by mouth.
4. Pain when anything was taken into the stomach.

This woman, while on a visit in Waynesboro, Pa., May 23, had an attack of gallstone colic lasting three hours, until relieved by hypodermic injection of morphia. The attack did not recur after the use of morphia. On May 25, I called in consultation Dr. Thomas S. Cullen of Baltimore, who advised operative procedure.

Operation May 29, Church Home, Baltimore, by Dr. Cullen, assisted by Dr. Gavin and myself. An incision was made to the outer side of the rectus, the gall bladder was small, and found to be intimately adherent to the stomach and surrounding structures (Fig. 2). The adhesions were gradually liberated until we came to a point where the gall bladder was fused to the stomach over an area fully 1 cm. in diameter. There was a distinct opening between the stomach and gall bladder at this point. The fistulous tract was divided and the stomach wound turned in on itself and closed with mattress sutures. The region of the gall bladder was carefully packed off and the gall bladder opened and drained. Two stones in the cystic duct were gradually forced up into the gall bladder and removed. The patient stood the operation well. On May 30, she had a chill, her temperature ran up to 105. Her

pulse was very rapid, but she was in fairly good condition. The temperature dropped the next day, but two or three days afterwards rose to 100. Since that time it rapidly came down to normal. She is very much better and her general condition is excellent. Patient continued to improve, and was discharged apparently cured, the first week in July. There was no escape of bile, and the abdominal incision had nearly closed. Since which time the patient has been able to indulge in a very liberal diet with no discomfort whatever and has led a very comfortable life. The operation demonstrated the fact that the pain produced by the ingestion of any food or liquid whatever was caused by the stomach pulling on the adhesions with which it was fastened to the gall bladder, liver and intestine.

Sept. 22, 1902, the subject of this sketch, after eating a hearty supper of tea, toast, soft-boiled eggs and sliced tomatoes, had a violent attack of gallstone colic; morphia was given hypodermically and, after a short while, patient was relieved. On examining the abdomen there seemed to be an abscess forming in the line of the incision. The point at which this ap-

Jan 20, 1903, I received a further communication from Dr. Neff, stating that for some time he had noticed a swelling in the region of the gall bladder, which gradually increased in size and at one point there was pain on pressure. There was also a burning sensation extending through to the back in the vicinity of the lower angle of the right scapula.

On January 16, following the usual dose of Sprudel salts and oil, she felt something give way in the vicinity of the swelling and had a very copious stool, composed principally of bile. Next day a second copious stool, containing a large quantity of bile, was passed. The patient experienced a great deal of pain with the escape of the bile and, to use her own words, "It was as if coals of fire were passing through the bowel." After the escape of the large quantity of bile the swelling entirely disappeared. There has evidently been an acute inflammation of the common duct, followed by marked dilatation of the gall bladder.

The subsidence of the inflammation in the duct has allowed the gall bladder to completely empty itself.

Addendum: April 1, 1903. Dr. Neff reports the patient as in very good health and leading a very normal life with no sign of a return of the trouble.

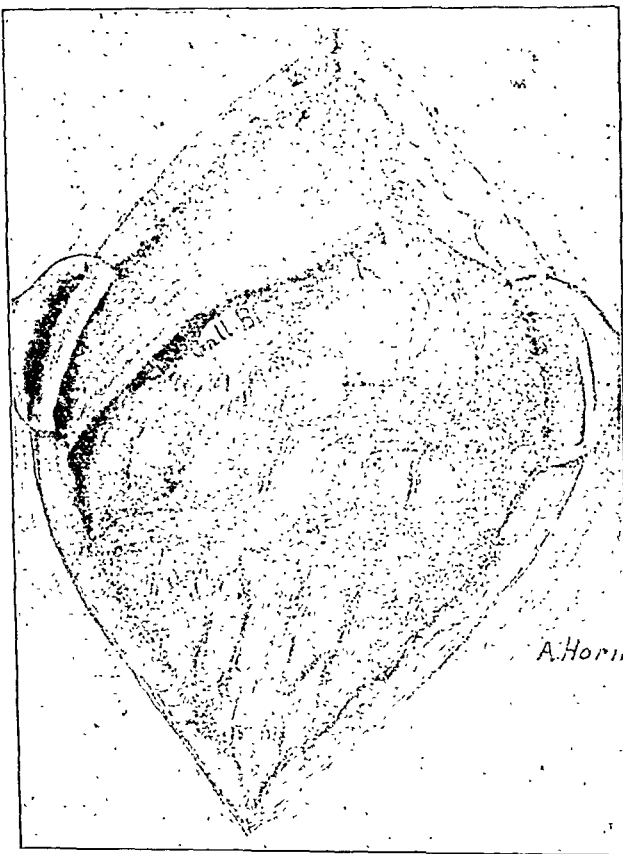


Fig. 2.—Gall bladder as viewed on opening the abdomen. The incision has been made through the right rectus muscle. The gall bladder is seen adherent to the stomach and to the transverse colon and there are adhesions between the surface of the liver and stomach. On separation of adhesions the condition detected in Fig. 3 was found.

peared was about 1 cm. in diameter. Two hours later this ruptured and about one quart of clear, thin, almost straw-colored bile was discharged. After this the stiffness of the muscles and the pain about the waist line entirely disappeared. For three days the stools had no sign of bile and were of oatmeal-like appearance. On the fourth day they commenced to have the normal bile stain. About 50 very small gallstones now passed, and the fistula ceased discharging and rapidly granulated and closed. These gallstones had evidently come down from the liver and blocked up the common duct, as at the time of the operation the common duct was patulous. Since this time the patient has been regularly taking Sprudel salts and has had no discomfort in region of gall bladder, and has gained about twenty pounds.

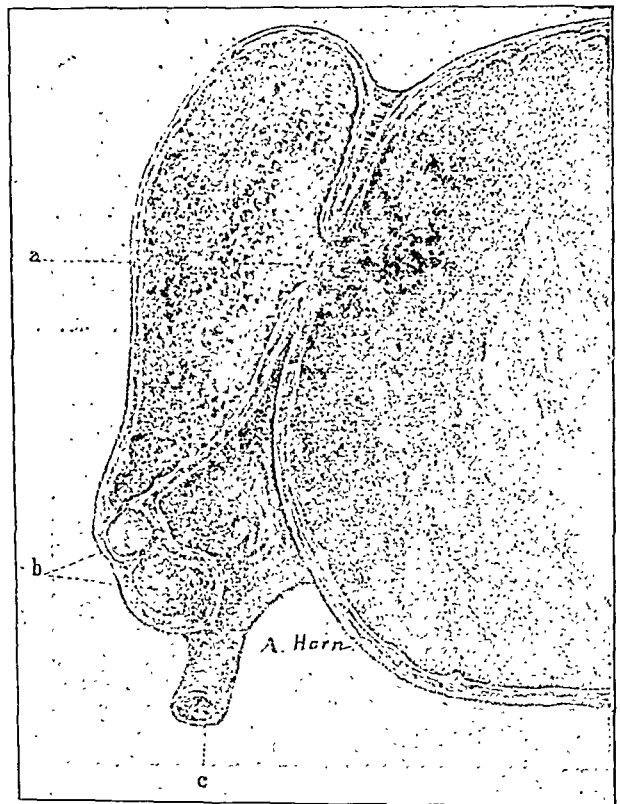


Fig. 3.—Fistula between the gall bladder and stomach. The gall bladder is densely adherent to the stomach and at *a* is a fistulous opening nearly 1 cm. in diameter between the gall bladder and the stomach. In the cystic duct are two small stones, indicated by *b*. These were readily pushed up into the gall bladder and removed. *c* is the common duct. At operation the stomach was freed from the gall bladder and the fistulous opening closed by a double row of silk sutures. The gall bladder was drained.

Mayo Robson sums up the subject of biliary fistulae as follows: "Many of the fistulae are mere pathologic curiosities, quite undiagnosable, and only capable of being discovered postmortem. Many must form and heal, leaving the patient cured, and thus are they not only not discovered, but they are probably not even suspected, for contrary to what one might suppose, fistulae between the bile passages and the hollow viscera in the majority of cases heal spontaneously, leaving only visceral adhesions; so that the fistulae are comparatively rarely found postmortem." It will thus be seen that the elaborate

figures given by Courvoisier and Naunyn can only give a very imperfect estimate of the frequency of these fistulae which must be constantly overlooked or not recorded.

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LIGHT IN THE TREATMENT OF LUPUS AND OTHER CHRONIC SKIN AFFECTIONS.

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Light and especially concentrated actinic light derived from the sun, is a specific in the treatment of lupus, chronic ulcers and other destructive lesions of the skin.

The first essential in the treatment of this class of cases is a practical and efficient apparatus, one with unlimited power and yet so easily manipulated that any physician may successfully operate it. The instrument which I use consists of a modification of the ray filter used in photography, and at a distance of 18 inches focuses, to a very fine point, a violet-colored light. At its smallest focal point it is intensely hot, but I have found that in certain cases nothing short of this strongly concentrated irritant light will sufficiently arouse the tissues to action to start the process of repair which, once started, continues to complete recovery.

The cell used is so constructed that it is readily adjustable at any angle to catch the rays of the sun. With the sun as a source of light the supply is unlimited, its strength is the greatest, it is richest in actinic power; it is, in fact, the one source from which all other lights are ultimately produced by means of mechanical appliances.

The light from the sun is accessible to every physician and it is free for the using. With a beam of sunshine one foot in diameter falling through the office window the instrument is ready for use.

The manner in which I treat lupus is as follows: The surface of the wound is first thoroughly cleansed, all scabs and crusts being removed, and it is then washed with water. I have avoided antiseptics as I wished to determine accurately the specific action of the violet rays. After this cleansing, I seat the patient with the cell placed between him and the sun and at a distance of about eighteen inches from him. I go over the entire wound surface and coagulate the albumin in the tissues until it is of a smoky white color. This usually takes but a few minutes. The treatment is then turned over to the nurse, who seats the patient a little farther from the glass, or a little nearer to it, so that the true focal point of the lens is avoided, and with the light strong, yet comfortably to be borne, she continues the application of the light for about twenty minutes.

A wet dressing of absorbent cotton and water is then applied until the following morning, when she removes the dressing and applies the weakened light for twenty minutes and reapplies the dressing. This dressing is

again changed in the evening. The following day she repeats this treatment in like manner, and on the third day I usually apply the strong light again, especially to any part which seems to be lagging behind in its response to the irritation produced. In this manner the treatment is continued until healing is complete.

Around the edges of the wound granulations spring up within a few days, new integument begins to form around the borders, and gradually the size of the wound diminishes until complete restoration takes place.

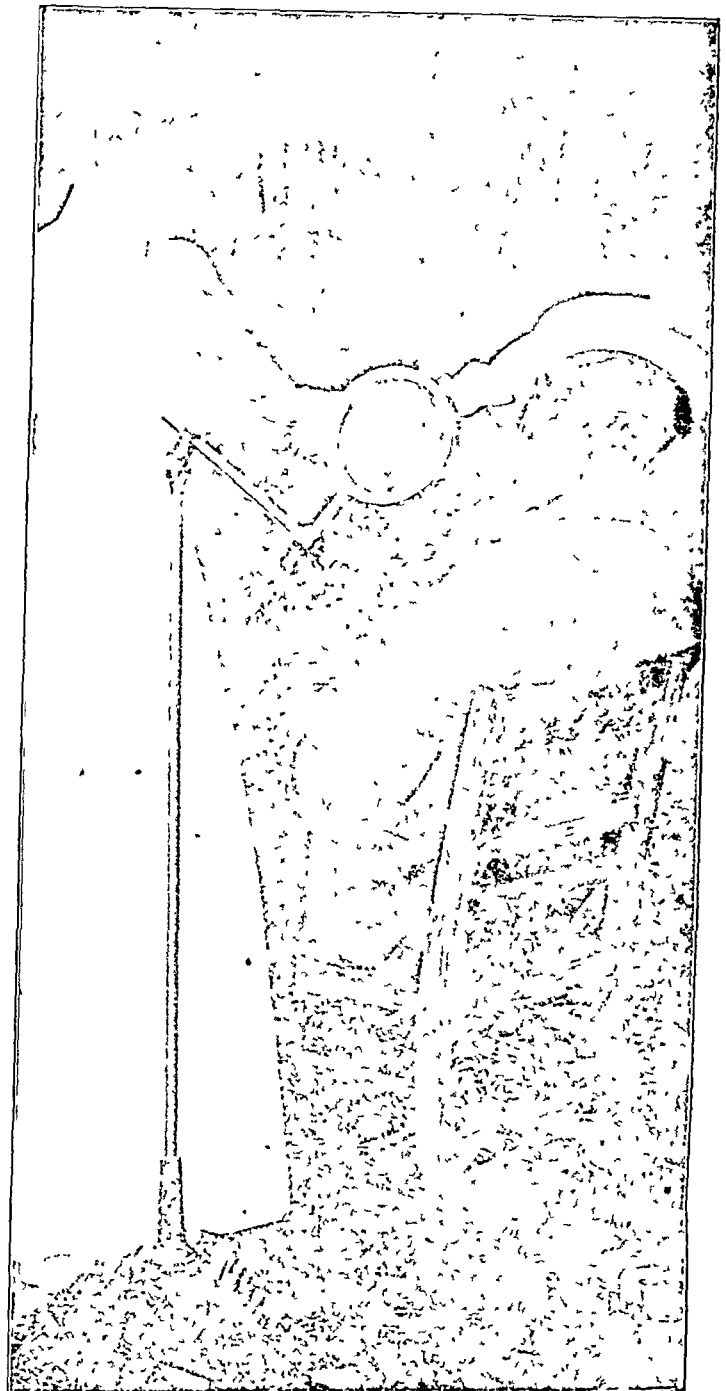


Fig 1.—Method of use of lupus machine.

I wish to emphasize the importance of the physician's applying the strong light himself and the necessity of closely watching that the parts are thoroughly cleansed twice each day. It is of the greatest importance that all crusts and scabs be kept from the wound, as these seem to be especially damaging to the process of repair.

The action of actinic light possesses a twofold potency: it is strongly germicidal and it is powerfully irritant to the tissues. By its irritant action an increased blood supply is furnished, new food is brought in abundance to the starving tissues and a retrograde

metamorphosis is converted into a reconstructive process. By its germicidal action a malignant sore is converted into a simple one, and Nature brings about the cure in the ordinary way.



Figs. 2 and 3.—Lupus vulgaris of nose.

In this connection will be recalled our treatment of chronic ulcers ten years ago, when we criss-crossed their



Figs. 4 and 5.—Lupus vulgaris of neck.

surfaces with deep cuts of the knife with a view to bringing about repair by the irritation produced by the



Fig. 6.—Lupus of cheek.

injury wrought by the knife. We now curette these ulcers with the same object in view. The irritant action of chemical light is much greater and can be extended to any degree at the will of the operator.

The apparatus used needs but little explanation, as it is very simple in construction and is easily operated. The solution of copper used is combined with alcohol to prevent freezing. The lupus lens consists of a plano-convex lens of eighteen inch focal length and is six inches in diameter. Behind it, at a distance of three-fourths of an inch, is placed a circle of plain plate glass. Between the lens and the plate glass is the space for the blue solution, which both cools the heat of the sun's rays and absorbs all but the blue rays, which contain



Fig. 7.—Same as Fig. 6. After treatment.

little heat, but are rich in chemical power. The lens is so mounted that it may be readily adjusted at any angle and the stand is of sufficient height that the patient may be seated in a chair while he receives treatment about the face or head. It may be dropped lower for use on other portions of the body.

The following records are presented as typical of results produced in the manner described:

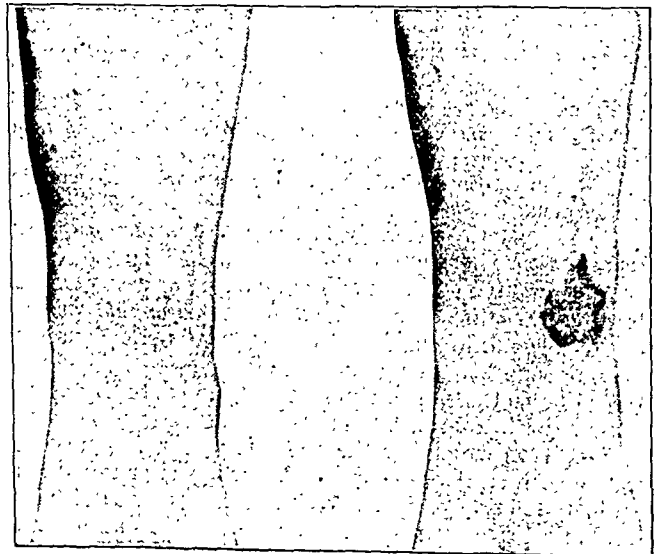


Fig. 8.—Chronic ulcer of leg.

CASE 1.—M. K., age 21, domestic; has had lupus vulgaris on left side of nose for one year. Father died of lupus and from effects of operation for it. Two points shown in cut were involved. She has tried various washes and ointments. August 9 light treatment was begun. Light was used daily for half an hour until September 1. No nodules then remaining, treatment was discontinued. September 20 ulcers were completely healed. There has been no relapse during two years' time. See Figs. 2 and 3.

CASE 2.—M. G. has had lupus on side of neck six months. It has ulcerated deeply into the tissues of the neck, is one and one-half inches in length and one inch in breadth. She began treatment in April, 1901. All nodules had disappeared May 1. No relapse. See Figs. 4 and 5.

CASE 3.—Anna K., age 35, domestic. Mother died from tuberculosis. Present trouble, lupus, began two weeks ago. When first seen it had penetrated all the layers of the skin. There were several smaller patches near the angle of the mouth. Three treatments with light near the cauterizing point effected a cure. See Figs. 6 and 7.

CASE 4.—Fig. 8 shows result obtained in chronic leg ulcer of one year's standing in a man 52 years of age. Site of ulcer six inches above left ankle. The ulcer was about the size of a silver dollar. Light was used for six weeks, at the end of which period healing was complete.

Strongly concentrated actinic light is a most efficient remedy and it should be generally adopted by the profession that the quacks may not reap a harvest from its irregular and illegitimate use.

THE THERAPY OF DYSENTERY.

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The therapy of dysentery is at present in no sense specific. While the causative agents have clearly set a dividing line between the amebæ on the one hand and bacteria on the other, the resulting treatment of either has not been uniformly successful. Quinin in amebic cases with the intention of killing the causative agent is highly irritating, as might have been expected, and does not reach all the amebæ, while the serum therapy of the cases of bacterial origin is in its infancy, though so far well spoken of.

This paper contains no new plan of treatment, for it is on the use of ipecac in dysentery, but the narration of several cases will illustrate what can be attained with this old and well-tried remedy.

The profession in India has established certain axioms in the administration of ipecac, and they are good to-day:

1. The dose must be large.
2. Its safe passage through the stomach without inducing nausea is of paramount importance.
3. It must contain all the active principles of *cephaelis ipecacuanha*.
4. It should be used early in every case, before pathologic changes occur in the intestines.

Attempts to use a refined ipecac have not been followed by good results. The method of securing the passage of the drug into the intestines with as little nausea as possible was by having the stomach empty, by counter-irritation to the epigastrium and by partly stupifying the patient with opium, but at times this fails to keep the patient from rejecting the remedy. Coating boluses of ipecac with salol was considered by the writer in order to avoid the action of ipecac on the stomach. Salol being insoluble in the gastric contents, the bolus passes on to the duodenum where the salol is dissolved and the ipecac liberated, where it undergoes some change in the presence of the intestinal juices which prepare it for its therapeutic mission.

The ipecac is first made, *secundum artem*, into large pills containing one-half gram each, which when dry are placed in liquid salol, either melted by heat or dissolved by ether. Each pill is picked up on the point of a pin and withdrawn, the coating being accomplished in a short time. Ipecac prepared in this manner was used in the following cases, with uniform success both as to

the safe passage of the drug through the stomach and prompt arrest of the disease:

CASE 1.—A. B., female, aged 45; American; seen in consultation; had been ill eight days. Diagnosis: acute specific dysentery, due to Shiga's bacillus. The patient was semi-comatose; pulse thready; there was considerable shock, and between thirty and forty discharges a day. She had been under saline purgation and rectal irrigation. Four grams of ipecac made into boluses coated with salol were administered. She immediately improved and subsequently recovered.

CASE 2.—A. C., female, aged 30; American; seen in consultation; had been ill for ten days, and was having twenty-five to seventy-five operations a day. There was tympany over the region of the descending colon, vesical and rectal incontinence, dry pointed tremulous tongue, anxious expression, considerable nervous and arterial depression, great weakness and constant nausea. The stools showed no amebæ; the Widal reaction was negative to Shiga's bacillus. Diagnosis: acute dysentery; cause unknown. She had been on saline and other unrecorded treatments. Seven grams of ipecac in boluses coated with salol were given. Operations ceased and prompt recovery followed.

CASE 3.—A. D., male; civilian; aged 25; American; had been suffering from discharges of blood and mucus for two months, was advised to go to the hospital, but declined. He was directed to go to bed and take seven grams of ipecac in boluses coated with salol, which he did, going to work the following day. He was seen four days later, and reported the disappearance of all blood and mucus, and that he was having one normal operation daily. He had been having from eight to fifteen operations a day prior to his treatment.

All cases of severity will not answer so promptly any more than will every case of malarial infection answer equally well to quinin; but if used early and in sufficiently large doses ipecac is probably more of a specific for dysentery than any other remedy of which we know at present. Most of the medical literature dealing with dysentery refers to ipecac with more or less praise. Dujardin-Beaumetz maintains that ipecac acts as a cholagogue aperient, and Yeo states, "Whether ipecacuanha acts in this way or not or as a special antidote to a specific poison, it is undoubtedly the most valuable remedy we possess for dysentery, especially in the acute form." Cunningham is reported as giving sixty to ninety grains of powdered ipecac, which, he says, "causes much nausea and vomiting, together with reduction of pulse rate, profuse perspiration, cessation of pain and tenesmus, and quieting of the bowels for twelve to twenty-four hours, the next motion being soft, fluid and free from blood or mucus."

A résumé of all the various articles of the *materia medica* which have been used from time to time in the treatment of dysentery can not but impress the reader with the utmost universal praise with which ipecac is mentioned. It is true other remedies have been extolled from time to time, but their history shows them to have been "the things of a day," and that ipecac deserves in some measure the encomiums awarded.

In 1672 ipecac was known in Europe. John Helvetius, grandfather of the famous author of that name, having been associated with a merchant who had imported a large quantity of ipecac into Paris, employed it as a secret remedy, and with so much success in dysentery and other bowel affections that general attention was drawn to it, and the fortunate physician received from Louis XIV a large sum of money and public honors on the condition that he should make it public. Local remedies and dietetic régime are indispensable in rendering comfort and aid to patients, but none can be said to produce a specific action nor are they followed

by such prompt relief as may follow the administration of ipecac in the therapy of dysentery.

In an article by Joseph Ewart, in which he outlines the usual ipecac treatment, going to great pains to impress the reader with the importance of avoiding emesis, he states that the drug should be repeatedly administered in order to secure its retention, and that:

The signal for the relinquishment of these doses is freedom from tormina and tenesmus, with the occurrence of refreshing sleep, feculent, bilious, or ipecacuanha stools, and restoration of the primary processes of assimilation. If no great amount of disorganization of the mucous membrane has taken place, these favorable changes are frequently noticed after the administration of the first or second dose. . . .

When ipecac fails to preserve the life of a patient its failure may generally be attributed to: 1, co-existence of abscess of the liver; 2, unchecked malarial poisoning; 3, permanent enlargement of the spleen, or liver, or both; 4, irretrievable constitutional cachexia; 5, Addison's disease; 6, morbus brightii; 7, phthisis; 8, strumous disease of the mesenteric glands; 9, peritonitis with or without perforation of the gut, or, 10, the existence of extensive sloughing or gangrene.

The advantages of the ipecac treatment—for the revival of which the profession in India and England is indebted to Mr. Scott Docker, of the Second Battalion of the Seventh Royal Fusiliers, stationed at the Mauritius—in the congestive, exudative and ulcerative stages of almost every form and type of acute dysentery, may be briefly stated. They consist in:

1. Its simplicity, its safety and its certainty, compared with any other method.
2. The promptitude with which the inflammation is stopped.
3. The rapidity with which repair takes place, (a) by resolution, or (b) by granulation and cicatrization.
4. Conservatism of the constitutional powers.
5. Abbreviation of the period required for convalescence.
6. Decrease in the frequency of recurrence.
7. Decrease in the frequency of abscess of the liver.
8. Diminution of mortality in cases treated.

All of these results are accomplished without calomel or other irritating purgatives or opium. There is no other remedy of which report speaks so highly as of this, and it is assumed that it has succeeded when the rest have failed, and its early use in every case is recommended.

Antitoxic or protective sera in the treatment of dysentery is noted as "doubtful but hopeful," in an article recently prepared by R. C. Cabot. Flexner states, as a result of his labors in this city, that "it is not unreasonable to hope that with the discovery of the specific cause of dysentery, particularly if it be a bacterium capable of being artificially cultivated, means will be found by which protective inoculation may be carried out with effect and safety. The fundamental conditions underlying such immunizations are now fairly established, and two general methods of accomplishing such results are open to investigation. In the first place, an active immunity may be achieved through the use of cultures of a determined grade of activity; in the second, the serum of animals may be employed either as a therapeutic agent or to provide a passive immunity.

"It has been found possible, through the use of cultures destroyed by heat or by the addition of chemicals, to protect small animals from the effect of subsequent inoculations of the virulent bacilli; large animals, such as the goat, when treated first with the dead and afterwards with the living cultures, develop a gradually increasing

resistance to the inoculations, their blood serum assumes highly agglutinative qualities for the bacillus and, co-incidentally, acquires protective and healing qualities.

"My own experiments relating to this topic have been carried out on small animals only, as no patients with acute dysentery have been seen by me since the serum from the goats has been available. Shiga has, however, been able to test the serum on human cases. According to Dr. Eldridge, up to Nov. 1, 1899, Shiga had treated with serum cases as follows:

1898.—In Laboratory Hospital: 65 cases, death rate 9 per cent.

1899.—In Laboratory Hospital: 91 cases, death rate 8 per cent.

1899.—In Horowo Hospital: 110 cases, death rate 12 per cent.

"During the period of 1899 there were under ordinary treatment at Tokyo:

At Horrojo Hospital: 116 cases, death rate 37.9 per cent.

At Horowo Hospital: 53 cases, death rate 37.7 per cent.

At Komagonic Hospital: 398 cases, death rate 34.7 per cent.

In private houses: 1,119 cases, death rate 28.5 per cent."

The application of curative sera to diseases of man was looked forward to as the utopian period of scientific therapeutics. Our expectations have been disappointed in more than one instance, but it is to be hoped that a serum of sufficient potency for the cure of dysentery will be given the medical world ere the present decade ends.

The chief objection to the use of ipecac being its frequent rejection, its use in compressed pills coated with salol is recommended as one method by which nausea and vomiting can be avoided, thus securing the full action of a remedy of world-wide repute in the treatment of dysentery, but a remedy often robbed of its specific virtues by faulty administration.

POST-OPERATIVE PULMONARY COMPLICATIONS.*

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In April, 1901, at a meeting of the Chicago Gynecological Society, I reported two cases of lobar pneumonia following operations. Both cases occurred in my practice within a single month, and were my first experience with this complication in a ten years' surgical practice.

In the first case, a young girl on whom I performed Alexander's operation, there was a distinct history of a cold, contracted shortly before the administration of the ether. The patient had a chill and rise of temperature within three hours after the completion of the operation. But one lung was affected, and the patient made a good recovery. The second case occurred in a patient from whom I removed a tube and ovary and suspended the uterus. The symptoms were not so severe as in the first case, nor could any history of exposure be elicited. She also made a good recovery.

At the same meeting Frankenthal reported a fatal case of double lobar pneumonia following an abdominal operation. Two other patients who were being prepared for operation at the same hospital about this time died from pneumonia before the operations were performed. This fact led Frankenthal to conclude that the pneumonia was not so much due to the ether or septic causes as to the great prevalence of la grippe at certain seasons of the year.

* Read by invitation before the Wayne County Medical Society, Detroit, Dec. 13, 1902.

Two cases of pneumonia, three cases of pleurisy and a single case of bronchitis following operations performed in my service at the University of Michigan Hospital during the past fourteen months, have renewed my interest in this variety of post-operative complication. Of the two cases of pneumonia, one died and one recovered.

CASE 1.—(*Gynecologic Case 159*).—*Bilateral Salpingo-Oophorectomy for Cystic and Atrophic Appendages. Appendectomy. Lobar Pneumonia on Second Day. Death on Eighth Day.*—The patient, aged 39, married twenty-three years, had suffered for a long period from pelvic pain and tenderness. March 18, 1902, the adherent tubes and ovaries were enucleated by the abdominal route and removed. As the appendix showed signs of chronic inflammation, it also was removed. The operation was free from shock. When the ether was started, the patient's right eye was seen to be edematous and the conjunctiva injected. At the time no importance was attached to this condition.

The next day the eye symptoms had increased and, on investigation, it was found that the patient had shown symptoms of having taken cold a day or two prior to the operation. Forty-eight hours following the operation, the patient was seized with a severe pain in the right lower thorax and corresponding shoulder. The signs of pleuro-pneumonia gradually became distinct. By the fifth day there was dulness over the entire lower right lobe, with the usual accompanying signs of consolidation. Dr. Dock was called in consultation and obtained, by aspiration through the eighth interspace, a considerable amount of bloody serum. The relief, however, was only temporary. The signs of consolidation grew more marked, the temperature ranged higher and the pulse grew more rapid and thready. The patient died on the eighth day following the operation. Unfortunately no autopsy could be obtained.

CASE 2.—(*Gynecologic Case 293*).—*Vaginal Celiotomy; Vaginal Suspension of the Uterus by the Round Ligaments. Bilateral Trachelorrhaphy. Perineorrhaphy. Acute Lobar Pneumonia on the Third Day. Recovery.*—The patient, aged 35, married, had shown no pulmonary symptoms prior to the operation performed, Nov. 21, 1902, which was simple and devoid of shock.

On the third day following the operation she complained of feeling chilly, and there was an immediate elevation of temperature to nearly 104. The fever remained at about this point until the crisis on the ninth day. For the first two or three days of the disease, cough was not a prominent symptom and only appeared on deep inspiration. It was at no time troublesome, and there was little if any expectoration. The physical signs of the lesion in the right lung were somewhat obscure at first. There were few adventitious sounds, and it was not until the sixth day that dulness over the affected area was marked. A slight change in the percussion note existed from the start and, with the other signs, left no doubt as to the presence of a central lobar pneumonia of the right side. There was a pseudocrisis on the eighth day. On the following day the temperature reached normal, there was a rapid clearing up of the lung, and the patient made a good recovery. The vaginal wounds healed by first intention.

Why did these patients contract pneumonia after their operations? Was the pneumonia due to direct irritation of the anesthetic, an ether pneumonia? Was it of septic origin? Could it have arisen from exposure and chilling of the patient during the operation? Such questions as these will arise in the operator's mind when a patient has pneumonia after an operation, unattended, as a rule, by much risk or mortality.

The distinctions between the kinds of pneumonia developing after surgical operations are not always borne in mind. Such a pneumonia may be an infectious disease, a true lobar or croupous pneumonia, or it may be an inhalation or bronchopneumonia. It has long been recognized that the last form is far from being un-

common after certain operations or when certain types of patients are operated on. Bronchopneumonia is apt to follow operations on the pharynx or larynx, and is very common after tracheotomies. The etiologic factor here seems to be the aspiration into the air passages of minute particles of food, which set up a severe inflammation in the finer bronchi. It is a true capillary bronchitis and its severity is directly proportionate to the amount of lung tissue involved. Bronchopneumonia also is apt to follow the administration of an anesthetic with or without operation in persons in the extremes of life. It is this factor which makes emergency operations, such as strangulated hernia, in young infants or children so much more dangerous than in adults. Very old people or those with weakened constitutions are also liable to develop bronchopneumonia after an anesthetic. Alcoholics are especially prone to this complication.

It is not so well known that true lobar pneumonia is not such an uncommon sequela of operative procedures. W. H. Prescott¹ looked over the records of various Boston hospitals for the purpose of ascertaining the frequency of this complication and could find only five authentic cases out of an estimated 100,000 etherizations. His conclusion was that ether rarely acts as an exciting cause of acute lobar pneumonia, and that the few cases of this complication may be classed as coincidences.

My own experience and that of other surgeons in the middle west with whom I have conversed on this subject, does not coincide with Prescott's statistics as to the relative frequency of lobar pneumonia after operations. Within two years I have had four undoubted cases in my own practice. The two just reported occurred out of 302 etherizations, of which 65 were for examinations and 237 for operations.

This brings up the question of whether the frequency of lobar pneumonia in my clinic can be explained by the nature of the anesthetic employed, its quality, or by the manner of its administration.

Ether is almost invariably employed as an anesthetic in the clinic, chloroform having been used only 17 times out of 319 anesthetics. The very best Squibbs' ether is used, so that the quality of the anesthetic can hardly be at fault. I have endeavored to perfect the technic of the administration of the anesthetic in the highest possible manner. An anesthetic chart is kept, showing the amount of ether used to render the patient unconscious, the total amount consumed during an operation and other data common to such charts. I personally see that the patient is not drenched with ether, and the anesthetizers are taught to attend strictly to their part of the work and nothing else. A good sign that the anesthetics have been administered well is that only twice has it been necessary to suspend an operation to revive a collapsed patient.

Particular care is taken at the clinic to avoid any unnecessary chilling of the patient during operation. Not only are the ordinary blankets employed, but such parts of the body as can be, are wrapped in cotton wool in order to preserve the body heat.

In order to prevent the hypersecretion of mucus so common during etherization, a hypodermic of atropia and morphia is given just prior to the anesthetic. If there be anything in the theory that the pneumococci find their way to the lungs through inspired mucus, as claimed by Whitney,² this danger is minimized by the

1. "Does Etherization Ever Cause Acute Lobar Pneumonia?" Boston Medical and Surgical Journal, March 28, 1895.

2. Boston Medical and Surgical Journal, Sept. 23, 1897.

action of these two drugs. I never hear in these days that distressing bubbling in the patient's throat. A tongue forceps, while always near at hand, is never employed, for the throat does not require swabbing.

The claim has been made, and perhaps justly, that the Trendelenburg position may be a factor in the production of pulmonary complications. That it impedes respiration during the operation, especially in fleshy patients, is a matter of common observation. The diaphragm is pressed towards the thorax by the viscera, which seek this position through the force of gravity or are crowded upward by the hands of the operator, who retains them in this unnatural position by gauze packs. It has been my custom for some time to modify the Trendelenburg position by partially elevating the head of the table after the intestines have been removed from and held away from the pelvis by packs. In this way one secures all the advantages of the Trendelenburg position while eliminating some of its disadvantages. The etiology of post-operative pulmonary complications, especially pneumonia, is obscure enough at best, and it behooves us to employ every means of prevention at our command.

It has been claimed that pneumonia is more apt to occur after abdominal than other operations. This is especially true if ether be the anesthetic employed. The statistics of Gurlt,³ compiled from 52,677 anesthetizations, show that fewer deaths can be attributed directly to the use of ether than to chloroform or the mixtures. Pneumonia, however, is especially liable to occur after ether narcosis. Out of thirty such cases following ether narcosis, there were fifteen deaths. Thirteen of these occurred after abdominal operations. The explanation, according to Gurlt, lies in the suppression of the cough because of abdominal pain and tenderness.

As regards the so-called septic form of pneumonia, I believe that the term is too loosely applied. There is undoubtedly a hypostatic form of pneumonia which develops usually at the base of the lungs of a patient with peritonitis or other forms of sepsis. This hypostatic pneumonia differs not at all from that seen in other febrile conditions. The higher and longer continued the fever, the greater is apt to be the involvement of the lung. Another form of pneumonia arising from septic conditions elsewhere in the body is due to the lodgment of septic thrombi in ramifications of the pulmonary artery. Catarrhal pneumonia may surround the abscesses produced by the thrombi, and the fusion of these will give rise to areas of consolidation of the lung tissue. The diagnosis, however, of pneumonia of this description is not difficult, because of the accompanying signs of sepsis.

I am convinced that I have overlooked many cases of pleurisy, with or without effusion, in my operative cases in past years because of failure to make careful stethoscopic examinations where thoracic pain is complained of. In cases of moderate abdominal or pelvic sepsis, accompanied by pain and tenderness low down in the abdomen, it is a common error to ascribe pain higher up to these causes. More often are directions given to extend the area of external applications than are careful thoracic examinations made.

The following case illustrates the sero-fibrinous form of pleurisy undoubtedly of septic origin:

CASE 3.—(*Gynecologic Case 306.*)—*Vaginal Hysterectomy for Foul-smelling Submucous Polyp, the Size of the Fist, Projecting from External Os. Septic Vaginal Discharge. Sero-*

Fibrinous Pleurisy, Right Side. Recovery.—The patient, aged 47, had flowed almost continuously for over a year. At entrance her hemoglobin was only 35 per cent., but was increased to 65 per cent. by the administration of iron and the control of the hemorrhage. Very little hemorrhage and no shock accompanied the removal of the tumor and uterus by the vaginal route (Nov. 12, 1902). There was some absorption from suppuration of the vaginal stumps, but at no time were the symptoms alarming.

On the fifth day following the operation the patient complained of sharp pain in the right axilla, increased by forced inspiration. Examination of the affected area revealed to and fro friction sounds and established the diagnosis of pleurisy. These signs were followed by those of a pleuritic effusion. The condition gradually subsided under the appropriate treatment.

Here was an undoubted case of pleurisy of septic origin, the micro-organisms passing upwards to the pleura from the septic focus in the pelvis by way of the lymph channels. Streptococci have been found in the fluid of such pleurisies. The fluid may be either clear, cloudy or purulent, according to the nature and virulence of the infection. Purulent pleurisies as complications of scarlet fever, measles and typhoid, are not uncommon. Sears quotes Betke as having found 58 instances of pleurisy as a complication out of 1,420 cases of typhoid.

The following case shows double septic pleurisy where the diagnosis was confirmed postmortem:

CASE 4.—(*Gynecologic Case 131.*)—*Bilateral Salpingo-Oophorectomy for Hydrosalpinx and Pyosalpinx in a Patient with General Miliary Tuberculosis. Bilateral Septic Pleurisy with Effusion. Death on the Fifth Day from General Suppurative Peritonitis. Autopsy.*—The patient, a frail girl of 22, had been ill for some months with signs referable to the pelvis. There was considerable operative shock, but she rallied under active stimulation. Septic symptoms developed almost immediately after the operation and resulted in death from peritonitis on the fifth day.

The day following the operation the patient complained of severe pain in the right chest and shoulder. The next day the pain was worse, although careful examination of the chest gave negative results. Within the next twenty-four hours pain had developed in the left thorax and to and fro friction sounds could be made out just below the fourth rib on the right side. The following day friction sounds could be heard over the left thorax.

The autopsy showed general suppurative peritonitis, general miliary tuberculosis and double pleurisy, more extensive on the right than the left side. There was a slight amount of cloudy fluid in each pleural cavity.

An interesting feature of this case was the difficulty in differentiating between beginning pneumonia and sepsis before the signs of both conditions became clear. There was at first very little abdominal pain and tympanites. The pulse was not particularly rapid nor thready, nor was the temperature markedly elevated. It was thought at first that she might be developing a lobar pneumonia until the ordinary signs of beginning general peritonitis appeared and were followed by an ever increasing pleuritic inflammation.

In still another case did a pleurisy develop after operation. Here, however, it is extremely doubtful whether it was due to sepsis.

CASE 5.—(*Gynecologic Case 100.*)—*Abdominal Hysterectomy for Chronic Disease of the Uterus and Appendages. Left Sided Dry Pleurisy on the Fourteenth Day After Operation. Recovery.*—The patient, aged 40, presented the usual symptoms of chronic disease of the uterus and adnexa. There was no history of previous pulmonary disease. Operation Jan. 17, 1902, unattended by shock.

For two weeks the patient's convalescence was uninterrupted, the wound healing by first intention. On the fourteenth day

3. *Annals of Surgery*, 1896, vol. xxiii, p. 232.

she was seized with a sharp pain over the left thorax, increased by forced inspiration. Examination was at first negative. Friction sounds were obtained two days later. While the temperature was but slightly elevated, the highest point reached being 101, the pleuritic complication was excessively annoying. There were no signs of effusion, and the patient made a good recovery.

Possibly in this case the pleurisy was tubercular, the lighting up of some old focus, as it is conceded that the majority of pleuritic inflammations are due to this cause. It is hard to ascribe it to septic absorption, as there were absolutely no septic symptoms in the case.

CASE 6.—(*Gynecologic Case 70.*)—*Hystero-Salpingo-Oophorectomy for Chronic Disease of Uterus and Adnexa. Bronchitis Following Operation. Recovery.*—The patient, aged 48, was operated on Dec. 6, 1901. Considerable shock attended the operation. There was prompt reaction to stimulation. The following day there was a troublesome cough and complaint of oppression and pain in the chest. Examination the following day showed bronchial râles in abundance. The expectoration at this time was profuse and muco-purulent in character. The pulmonary symptoms subsided gradually under treatment. It was learned on inquiry that the patient had a cold just prior to the operation, but had not mentioned it.

I have recorded this case, not because it exhibited any alarming symptoms, but because such a bronchitis is not uncommon after ether narcosis. Under ordinary circumstances, even in the presence of a mild pharyngitis and laryngitis, the conditions present in an ordinary cold, I do not believe it is especially dangerous to administer ether. A slight increase of the irritation will be the only result, as a rule. But one is not sure of not having the grip germ present in the upper respiratory passages at certain times of the year, and experience has shown how deadly this organism is at times. The pneumococcus often found in the pharynx may not gain entrance into the system during a mild inflammation of the upper air passages, but when to this is added the irritation of the ether, it may actively flourish and place the patient in extreme peril.

For these reasons I am having more and more careful physical examinations made of patients prior to the narcosis and unless the operation be one of emergency it is postponed in the presence of even a slight cold.

IODOFORM DERMATITIS.

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It is the purpose of this paper to notice a phase of action iodoform sometimes assumes in the form of a dermatitis. By the term local iodoform dermatitis I have meant to distinguish this process from that showing constitutional involvement and an eruption scattered more or less over the body. This general involvement is well understood, but the purely local condition has been but little written of, and is probably not generally recognized as being produced by the application of iodoform, even when it does appear. My reason for calling this local iodoform dermatitis is the fact that it comes only on the surface surrounding the wound to which iodoform has been applied, produces no eruption or discomfort elsewhere and shows no special constitutional symptoms.

THE CLINICAL COURSE.

The appearance of the surface begins to change toward the end of the first 24 to 48 hours after application to an open wound, and resembles very much the poisoning of *Rhus toxicodendron*, with the exception that there is

usually not so much redness present in the iodoform poisoning, for it is obscured by the vesicles that form on the skin. Numerous small vesicles appear around the point of application and increase gradually in the area they cover, until they may extend several inches from the focus. The vesicles toward the focus grow larger than those at the periphery because they are closer to the poison and get more of it. Often a number of vesicles coalesce and produce blebs of considerable size, which rupture and allow the contained serum to escape. Once the epithelium is broken the liberation of serum is more abundant in these than in any other lesions I have ever seen. In a few hours dressings are completely saturated with serum. The dressings thus stick closely to the wound, unless it is covered with an unguent. On removal of the cuticle the true skin appears as a thick, red, raw, edematous, uneven surface, often filled with little pockets of serum, resembling vesicles, but for the absence of the cuticle.

In a few instances the skin on which the blebs appear seems to be inflamed beyond the limits of vesiculation, but the majority of the cases I have seen have been devoid of such manifestation.

This eruption is likely to be mistaken for some other lesion, unless we remember not only its possibility, but as well its comparative frequency, and that it comes from iodoform no matter in what manner it is applied or to what surface. I have seen it come from the powder and the gauze, from application to the mucous surface and the skin. I have seen it called infection or eczema and treated for such, growing worse all the time.

The spread of iodoform dermatitis does not seem to follow any very definite rule, the usual method being by uniform extension in every direction. I have seen a case due to application to the stump made by enucleating an eye, spread upward over the brow and downward over the upper part of the face. Another case, the photograph of which is here presented, began at the metacarpophalangeal joint and extended up on the dorsum of the hand and down the dorsa and sides of the fingers. I saw another case with lacerated scalp have the whole side of his head above and below, in front of and behind the lesion, covered with ruptured, weeping vesicles. This fact seems to indicate that the spread of this process is through the connective tissue spaces rather than the lymphatics, as I at first thought.

The chief symptom complained of by the patient is an intense, intolerable itching; this symptom frequently begins before any change can be observed in the part complained of. It is incessant and described as a burning pain. Tenderness and irritability are other symptoms worth mention. These patients suffer intensely if great care is not used in removing dressings.

The duration of iodoform dermatitis is from one to four weeks under treatment, with removal of the cause. If iodoform is continued on the wound, in consequence of a false diagnosis, as that of infected wound, where iodoform is certainly a very useful drug, the symptoms will continue worse and worse until, from disgust, the surgeon tries some other drug.

How important must it be, then, that we recognize iodoform dermatitis when we see it, for, in the first place, almost any surgeon who uses iodoform in infected cases, having confidence in his drug, would increase the dose, and so increase the poison. Again, every patient who suffers once from this trouble ought to be told frankly by his surgeon that he has an idiosyncrasy for iodoform, that it poisons him, and in case of receipt of

another injury he should tell the attending surgeon of this fact.

The idiosyncrasy for this drug is peculiar in some respects. I have used the very best make of the drug I could find. In one instance a patient was treated with it without harm; shortly after his recovery he received another wound, which became infected, and on applying iodoform from the same bottle to it a typical case of dermatitis resulted. The patients who have, under my observation, developed this condition are usually of a sallow, unhealthy appearance, and somewhat anemic; but it is not confined to this type. I have seen only two or three cases developed in negroes, the failure to see any at all until recently having led me to believe it was not possible in them; but one case of a severe nature, that I saw recently, developed in a male negro, aged

definitely; the vesicles once ruptured in iodoform dermatitis, this discharge occurs without exception and is frequently very difficult to control. Iodoform seems to produce its effect by spreading through the cellular tissues of the skin; iodine by acting only on the surface. Recently I saw this same lesion produced by aristol.



Figure 1.

21 years, who had suffered from indolent ulcer of his leg for four or five months. I have been able to find one case, a trained nurse, on whose hand the vesicles would form if she even dressed a patient who was having iodoform applied, whether she came directly in contact with the drug or not.

The poison does not seem to be simply the iodine liberated. I have used iodine on as many cases as I have iodoform, yet not one of them has shown this vesicular type found consequent on iodoform. Iodine blisters many people very easily, but produces this blister under the cuticle, which, when it is peeled off, leaves a smooth, raw surface, not one showing irregularities like that from iodoform. Beside, iodine is limited in its action to the site of application, while the vesicles due to iodoform cover a wide area surrounding the original lesion. Again, the blister made by iodine, when it is opened and the cuticle taken away, does not tend to discharge serum in-



Figure 2.

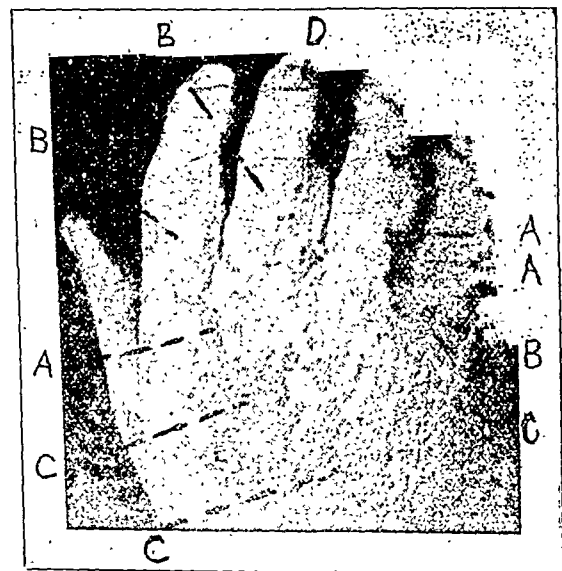


Figure 3.

ILLUSTRATIVE CASES.

The description made above will be better understood by the study of accompanying cuts.

Figure 1 represents a case of iodoform dermatitis 44 hours after the first and only application of iodoform made to the stump left by enucleation of the patient's left eye by Dr. G. C. Savage. This case suffered no rupture of the vesicles and was well at the end of one week from the beginning of treatment.

Figure 2 is iodoform dermatitis 72 hours after an only application of iodoform to an infected laceration marked A. A large bleb is seen at B and surrounding this are the small vesicles C. The case was as follows:

J. W. G. came with slight laceration on dorsum of left hand, July 18, 1901. This was cleansed antiseptically and was treated with no application, except bichlorid dressing for four days, when a little pus appeared. It was then dressed with sparing applications of iodoform of the very best quality from a box, out of which I had used half the contents on other cases with no harmful result. He returned after forty-eight hours for another dressing, at which time the peculiar form of local iodoform poisoning shown in the cut was apparent. The blisters were clipped and carbolated vaselin applied every day.

Figure 3 shows an advanced stage of the process, eight days after the application was made (March 4, 1901) to the infected laceration of the fourth and fifth fingers and of the dorsum near the base of the index finger shown at points A—A. The first succeeding dressing was March 6, 1901, when the patient complained of considerable itching of the parts. On examination, several blisters, which surrounded lesions and contained a yellowish serum, were noticed. The iodoform was thoroughly washed off, but too late to prevent the dermatitis. The process continued until at its worst the hand appeared as this picture shows it. The points B—B are the dead but as yet unseparated epithelium; C—C are red inflamed areas where the epithelium has come away; D is a wart, having nothing to do with the disease. The chief characteristic of these wounds is their abundant exudation of serum. Notice in the region devoid of epithelium, the small granular bodies; they are accumulations of serum in the skin proper. This photograph was taken March 14, 1901, just eight days after first appearance of blisters and ten days after application.

TREATMENT.

The treatment of iodoform dermatitis is, in the first place, to stop the application as soon as the first symptom of itching is complained of and the first little vesicle seen; cleanse the surface thoroughly, using peroxid of hydrogen to loosen up the iodoform that has adhered to it, remove every particle of the drug, for any part of it left acts continuously as a poison and delays recovery. After cleansing, daily applications of carbolized vaselin 5 per cent., or an aqueous solution of carbolic acid, should be made until all vesicles disappear. I have obtained better results from this application than from any other. It is well at each dressing to immerse the part in an astringent solution in hot water for from 10 to 30 minutes. If dry dressing or dusting powders are used, they must be applied freely and repeated frequently, as they become early saturated with the exuded serum.

CELL IMPLANTATION IN THE PRODUCTION OF TUMORS.*

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The problem of the origin of tumors is a part of the physiology of growth. In explaining malignant tumors pathologists made use of two of the most obvious instances of ordinary tissue growth, namely, embryonic development and regenerative phenomena. Accordingly two theories have been advanced to explain tumor growth. The first one explains tumors as originating from embryonic cells, either actually detached from their normal surroundings, or at least functionally detached. With or without changing their place these cells do not

take part in the further development of their neighbors; they remain in an embryonal condition, are not functionally active as the normal surrounding tissue is, until at a later period they begin to make use of their latent, stored up forces. Being locally or functionally disconnected they do not find the tension of the neighboring cells opposed to them and they can now grow indefinitely. This is, in the main, Cohnheim's theory, especially as it has lately been further developed by Wilms. This theory, therefore, combines the two factors named above. It makes use of the embryonic character of the tumor producing cells, and of the fact that these cells are disconnected, implanted, as it were, in a strange environment. The lack of the normal tension or the regenerative factor of growth is added to the embryonic factor.

Some clinical facts seem to support this theory. Many teratomata can hardly be explained any other way. Many mixed tumors suggest such an explanation as to their origin. There seem to be tumors representing transitional formations between the teratomata on the one side and simple tumors, like sarcoma, on the other side. But it is difficult to explain many tumors, especially many carcinomata, on this basis. Therefore, Ribbert, though accepting the first theory as sufficient for many cases, added a supplementary theory, making solely use of the regenerative factor for the explanation of tumors. Through inflammatory processes adult cells become separated from their normal ground. Cells which are no longer subjected to the inhibiting influence of their neighboring cells begin, as ordinary wound healing shows us, to grow, until they find their normal connection with cells of the same kind. Cells which are perfectly detached from their normal ground will probably never find their normal environment producing the necessary tension and will therefore be able to grow indefinitely.

After having thus defined the two factors underlying these two theories, we have to consider how far these conceptions really adequately explain the growth of tumors.

The first problem to investigate is: how do displaced embryonic cells actually behave? A number of facts have been ascertained through experiments carried on in the last twenty, and especially in the last ten years, which to some extent enable us to answer this question. Still, our knowledge is yet limited, especially because some facts have been found in certain species of animals only, and in applying the results of these experimental facts we have to do it with this restriction. Let us first consider what becomes of the earliest embryonic cells, whose normal relation to their neighboring cells has been disturbed. If one-sided pressure is exerted on the segmenting cells of the egg of a frog, e. g., so that the normal succession of cleavage is altered and the relation of the first cleavage cells to each other is different from their ordinary relation, a normal embryo ultimately results. If the first blastomeres are entirely separated from each other each one develops a normal though smaller embryo, the number of cells formed being proportionately smaller, their size remaining unaltered. This holds good absolutely only up to the four-cell stage; isolated cells from the eight and sixteen cell stage still begin the normal development, and some of the blastomeres of the eight-cell stage run through the whole course of their development. but the blastomeres derived from these later stages stop at an earlier stage of their development. Thus the blastomeres derived from later stages differ in their fate from earlier blastomeres, not

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. Alfred Stengel, J. Hektoen and Frank B. Wynn.

as was to be expected by the former developing more specified parts of the whole, but instead, they form the first stages of whole embryos. No conclusive experiments have been made with regard to the fate of isolated blastomeres of later stages. Sufficiently large pieces of blastulae also can develop perfect larvæ. At a somewhat later stage certain parts of the embryo must be present in the cut-out piece if the gastrulation shall take place. A certain morphogenetic localization has perhaps already taken place at this stage. Very few data are at hand for later stages. The observation of Roux, however, might be mentioned, who found very frequently in frog embryos with a closed medullary canal, isolated cells of the character of the much earlier morula stage.

Of importance are the recent experiments of Spemann. He found in triton at a stage when the medullary plate is already indicated, that by tightening a ligature across the medullary plate the anterior end of the posterior part will form a head just as the anterior part will do. We see that under these changed conditions ear vesicles can be formed from parts which, if the development would have proceeded normally, would not have formed any part of the head. That, however, does not yet prove that any isolated cell of an embryo at this stage is able to form these structures, but probably the connection of these cells with a large part of the embryo is necessary for this result.

Before drawing any conclusions from these experiments with regard to tumor formation, the results of experiments of a different kind shall be reported. Pieces of the tissue of embryos of different age were transplanted or injected into adult animals. At variable periods afterwards the fate of these pieces was determined. The following result was obtained: Most tissues grow and may even undergo a certain differentiation, corresponding probably (but how far that holds good has not been determined) to the differentiation they would have undergone normally. In some instances, where especial attention was given to this point, it was found that only a part of the transplanted tissue survives, that most of it degenerates and that the succeeding growth takes place from the surviving elements. The rate of growth is different for different tissues; it is most pronounced in the case of cartilage, but other tissues also grow, and epithelial cells may even arrange themselves in glandular form, even if they have been injected at such an early embryonic stage that no differentiation of this kind has yet taken place. Even glandular epithelia with granules characteristic for gland activity may develop. Ultimately, however, all these cells cease to grow and become resorbed. (Nevertheless, it is still to be determined whether certain cyst-like epithelial structures may not remain stationary, indefinitely, without becoming absorbed.) If we inject, instead of embryonal tissue adult tissue the result is, on the whole, the same. Of course, no differentiation comparable to the embryonic development takes place. Transplanted adult cartilage grows markedly less than embryonal cartilage. But a similar difference between the growth of adult and embryonic tissue does not seem to exist with regard to other tissues. In some cases adult cells even seem to grow better than embryonal cells. Further investigation into this question is needed. The data at hand at present do not justify the widely accepted idea that all embryonal transplanted tissues are much superior in their faculty to grow to adult tissues.

Let us now consider what conclusions might be drawn from these facts with regard to the formation of tumors. There are tumors consisting of a number of different

tissues, with a limited growth, more or less resembling an irregularly formed embryo. Such teratomata might be derived from a detached blastomere, undergoing afterwards an autonomous development. Also Spemann's experiment might help us to explain certain tumors of a similar complex character. A wound or tear in the embryonic tissue of a later period might give rise to unexpected "heterotopic" formation, as e. g., to a brain-like tumor, at the caudal part of the spinal column.

But already here we find difficulties. In the first place we find these complicated tumors, although not exclusively, still in the majority of cases in the ovary and in the testicle. The explanation advanced to meet this difficulty is not sufficient and not quite satisfactory. In this connection it may be added that also mixed tumors of a less complex kind are, although not exclusively, mainly found at a few places, and again especially in glandular structures like the kidney, the salivary, lachrymal glands, and, to judge from recent findings, also in the thyroid gland. Roux observed early embryonic cells in different parts of the frog, not only in the "Anlage" of the genito-urinary organs; but, to my knowledge, just in the frog where such aberrant cells seem to be of a relatively frequent occurrence, teratomata or malignant tumors have never been described.

Nevertheless, the origin of this kind of tumors from blastomeres is the most probable one, although it must not be forgotten that it remains a mere hypothesis at present. Our knowledge does not seem to me to warrant us to exclude with an absolute certainty the older view of Waldeyer as to their possible origin from germinal cells, nor the hypothesis of Pfannenstiel as to their origin from ova. Mammalian ova may, in the beginning of the atresia of the follicles, show the first stages of segmentation. This segmentation is under the given conditions irregular, but irregular, also, is the segmentation of the ova of sea urchins in Hertwig's and Morgan's experiments. We must hesitate to exclude merely from data supplied by descriptive embryology possibilities which might be realized under conditions different from the ones under which the normal development takes place. Observations on the ordinary embryologic development would not have admitted the possibility of the development of isolated blastomeres to full embryos or of the formation of a typical lens from the retinal part of the iris in an adult organism. But there is a second difficulty. The growth of detached or separated embryonal cells leads, according to the above reported experiments, to a definite, limited growth. These embryomata, however, may start to grow like a malignant tumor, indefinitely, and may produce metastases. This also holds good of certain of the less complex mixed tumors, which otherwise might, in part at least, be explained as derived from detached embryonic cells or tissues of a later, already more differentiated type.

That leads us to the further consideration, can malignant tumors be explained by the detachment of cells, embryonic or adult? Malignant tumors grow apparently indefinitely; they may penetrate the surrounding tissue. Cells detached from the main tumor may, if they are not destroyed in the beginning (which probably frequently happens), multiply rapidly and form metastases. We saw that detached or transplanted normal embryonic or adult cells behave quite differently in the large number of experiments made. There is only one apparently divergent result published, the experiments of Lack with the scrapings of the ovary of a rabbit. That this apparently different result is due to an erroneous interpretation has been made very probable by Shattuck. How-

ever, it might be objected that there exist all degrees of malignancy. There really do exist tumors with different degrees of energy to grow. It has further been maintained, especially by Lubarsch, that the formation of metastases does not principally depend on the energy of growth of the tumor cells, but on a constitutional factor in the individual affected by the tumor (the capability to resorb transplanted cells being diminished). The transplantation of sarcoma and carcinoma, which has now succeeded in a sufficient number of cases, demonstrates, among other facts, that these objections do not hold good. The formation of metastases is caused by a primary increase in the energy of growth of the tumor cells. The transplanted cells rapidly multiply in a very large number of individuals of the same species. Secondly, transplanted tumor cells continue to multiply apparently without end, and therefore the difference between the transplantation of tumor cells and of ordinary embryonic or adult cells is very striking. With the tumor cell we seem to transplant some so far unknown factor which causes the cells to multiply without end. Different tumors have a varying energy; but this varying energy remains about constant in the same tumor in the course of a long series of succeeding transplantations. If we transplant pieces of a benign tumor, the transplanted cells remain benign. And even when we cut out pieces from such benign tumors at different intervals, the tumor did not, in the experiments made, assume a malignant character. On the other hand, transplantation of hypertrophic granulation tissue into different animals of the same species from which the original tissue was derived, was rapidly absorbed.

If Cohnheim in his lectures still maintained that experimentally transplanted cells may produce tumors, that, however, transplanted pieces of real tumors did not give rise to new growths—to-day we must reverse this statement. Neither the regenerative factor alone is able to change ordinary cells into cells of a malignant tumor, nor the embryonic character of the cells added to the regenerative factor. The results of experiments carried on from different points of view and with different methods corroborate each other. Ordinary embryonic cells, transplanted, have, under conditions, created experimentally only a limited growth. Therefore, we have no reason to assume that the results obtained so far are due to some accident and might be reversed some day. Still, there are factors which have perhaps not yet received the attention they deserve, e. g., the soil into which the tissues are transplanted, although a few investigations have been made into the question of the influence of the soil. It has recently been stated that tissues transplanted into ovaries had a more pronounced growth than those transplanted elsewhere. There does exist, however, another factor of more general significance. In the experiment of Spemann previously mentioned, embryonic tissue of triton could at many places produce a head, where, in the course of normal development the same tissue would have given origin to other organs. A head has, however, never been produced by injection of embryonic tissue. It makes some difference if the regenerating, detached, embryonic cells are on one side still in their normal connection with the rest of the body. It may be that the quantity of the regenerating substance has something to do with the different tissues regenerated by apparently the same cells, as especially Morgan suggests in some other connection. It may be that other correlative factors, perhaps of a specific chemical character, are here at play. There are other facts perhaps to be explained in a similar way. Pieces of

hydra grafted to each other form different organs, if, after the union has taken place, both pieces remain of about the same size or if a large piece is cut off from one of the pieces. Perhaps also the fact that epithelium transplanted into epithelium has a different fate from epithelium transplanted elsewhere may belong to a similar category. The theories based on the supposition of detached, either embryonic or adult cells, as the cause of tumors, are at the present state of our knowledge not sufficient to explain the growth of malignant tumors. If transplanted epithelium enters into the normal union with connective tissue, the expansive growth of the epithelium will soon be arrested under formation of small cysts. If, however, such a regular union does not take place, the epithelium after a preliminary growth soon degenerates and connective tissue penetrates it. Decrease of tension added to sufficient nourishment is therefore not able to induce such epithelium to indefinite expansive growth, although such epithelium transplanted into blood serum, e. g., reproduces a number of the morphological appearances of carcinoma. Nevertheless, many, or perhaps most cells have a faculty for growth which is apparently almost indefinite, with regard to the quantity of tissue which can be produced and perhaps also to the time over which such growth can extend under favorable conditions. Why the transplanted tissues after a preliminary growth cease to continue to grow we do not yet know. Perhaps exhaustion of reserve material in the cells is the cause, perhaps some other factor plays a part. If we shall be able to experimentally prolong and increase the growth of transplanted tissue we will be nearer an understanding of the factors underlying the tumor growth.

The deficiency of the theories discussed here was, it seems, also recognized more or less by their authors. Wilms admits that some other unknown factor may come into play to produce a malignant tumor, though at other places the fact that the growing embryonic cells do not grow in their normal relation with neighboring cells seems to be sufficient to him to explain the boundless growth. Ribbert mentions "accommodation" of certain cells to the conditions of their new environment as necessary for their transformation into tumor cells. Israel, who applies similar principles as Ribbert, modifying them, however, in such a way as to include carcinomata arising from the surface epithelium directly and not from implanted cells, makes use of an hereditary transmission of an acquired increase in the energy to grow. Also Adami, in his theory which otherwise is based on different principles, makes use of an acquired "habit to grow." These or similar factors are perhaps not yet well defined, but they may be accessible to an experimental analysis. In this connection some recent experiments of Lyon might be mentioned, in which he succeeded in proving that an acquired immunity against potassium cyanid may be transmitted to succeeding generations of cells.

At the base of the theories discussed here lies a principle mainly gained by deductive a priori reasoning which was clearly expressed, especially by Weigert. This principle says that there do exist functional Reize (exciting causes), but no formative ones. All cell growth is caused by removing the tension of the neighboring cells. This theory itself is based on a theory of development, according to which no interdependence between normally developing parts of an organism takes place and all regenerative processes are caused by the presence of a reserve idioplasma called into action by removing the tension of the neighboring tissue. This

principle is a negative argument in favor of Cohnheim's and Ribbert's theories, excluding as it were the possibility of any other explanation for cell division. More promising, however, than the discussion of the above stated principle seems to be, at least with regard to the tumor problem, an analysis, and especially an experimental one, of the facts of embryonic development and of the regenerative processes. The latter must be an individual one for the different tissues which may behave differently. And here new methods must be worked out for new problems which suggest themselves. As Herbst and Spemann made it very probable that the touch of certain parts of the optic vesicle caused the skin of the head (and probably any part of the skin of the head) to form the lens, so G. Wolff demonstrated recently that the regenerative growth of the cut-off extremity of a triton does not take place if the medulla and the spinal ganglia are removed. In these cases we certainly can not speak of a removing of mechanic tension as the cause of growth. If the meaning of the removing of tension does not restrict itself to mechanic tension, it would be only used in a metaphorical sense and might mean any change of a chemical or physical nature; it would therefore essentially not be different in its meaning from the conception of a formative "Reiz." These causative factors for growth are at present still mostly unknown to us. Their analysis will also be necessary for a full understanding of the etiology of tumors. For even if micro-organisms shall have been definitely demonstrated as the cause of tumors, great as this achievement would be, the problem would still remain how such physical or chemical conditions created by the micro-organism can be the exciting factor of increased cell division.

DISCUSSION.

DR. H. D. PEASE, Albany, N. Y.—Before many of the phenomena observed in tumor formation and the production of metastases can be explained we shall certainly have to know more about the physiology of normal tissue elements, both embryonic and adult. Such questions lead to a discussion of the problems of cell division, tissue differentiation and inheritance. Even if it is eventually found that micro-organisms have an etiologic relation to malignant tumor formation, many of the phenomena which occur in such formations will require for their explanation a consideration of these problems.

REPORT OF A CASE OF TYPHOID PERFORATION WITH GENERAL PERITONEAL INFECTION

AND FIVE OTHER CONSECUTIVE CASES OF GENERAL SUPPURATIVE PERITONITIS; ALL RECOVERED.

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It is the prevalent opinion of the profession that practically all cases of general suppurative peritonitis should terminate fatally. That this is not true, however, is forcibly illustrated in the cases here reported. The questions arise, therefore: 1. What are the conditions which produce the fatal result? 2. Can these be overcome by medical or surgical treatment, and if so, when and how?

General suppurative peritonitis is not necessarily a fatal disease. The result of a general peritoneal infection depends on the following:

(a) *The type of infection.* If it be a virulent streptococcus type, with little pus formation, the peritoneum is rapidly denuded of the epithelial covering and becomes a "blistered surface" through which absorption rapidly

takes place. Death in these cases is caused by the large quantity of the products of infection rapidly absorbed. If the poison be diluted or the pressure under which the infective products are retained be reduced the patient may pass over the critical period to a convalescence. If it be a staphylococcus or colon bacillus infection, the denudation of the peritoneum is slower, the danger of immediate overpowering of the patient by the absorbed toxins is diminished and the fatal termination is postponed often to four or six days, until such time as the fibrinous exudate which covers the peritoneum is exfoliated, taking with it the peritoneal endothelia. A rapid and fatal absorption may then ensue.

(b) *The period of time that elapses between the infection and the time of operation.* In the past the diagnosis of perforation was based on the combination of symptoms included under the term collapse, which was believed to occur a few hours after the perforation took place. At present the diagnosis of acute infectious perforative peritonitis is based on the symptoms of pain, nausea and vomiting, localized tenderness, circumscribed flatness on piano percussion, elevation of temperature and hyperleucocytosis, in the order mentioned. With these symptoms many of the patients give a history of diseased conditions which predispose to the development of perforative peritonitis. The operation should, therefore, be performed as soon as these symptoms are manifest. If it be postponed until the patient is in collapse the case will terminate fatally. If it be performed, however, in the early stage, the "peritoneal shingles" or endothelia will be found intact, thus preventing absorption. When these natural barriers to absorption are destroyed, as is the case when operation is delayed, a fatal termination can not be obviated.

(c) *The tension under which the products of infection are retained in the peritoneal cavity.* The mere pressure of pus in this situation does not necessarily mean absorption of the infective products. The greater the pressure under which the pus is held in these acute conditions the more rapid the absorption. This is true, not only in the peritoneal cavity, but also in suppurations in the cellular tissue in any portion of the body. Remove the pressure and there is an almost immediate cessation of absorption, as is shown by the sudden subsidence of the symptoms of infection after draining an abscess in any portion of the body, notwithstanding that pus remains in this cavity after it has been opened. The reduction of pressure is one of the basic principles of treatment of cases of general suppurative peritonitis. We believe, and have shown, that irrigation is not necessary in the peritoneal cavity any more than it is in circumscribed suppurations of other tissues.

(d) *The diffusion of the infective material through the peritoneal cavity.* It is well known that when this diffusion takes place in the upper half of the peritoneal cavity the danger is enormously increased, because absorption from this part is much more rapid than from the lower or pelvis portion. On this basis all patients were kept in the semi-sitting position, at an angle of thirty-five degrees, from the time they came under observation, both before and after operation, until the pus was entirely removed. In all the cases an effort was made to allow the pus to settle into the pelvis, where it would be free from pressure and could be easily carried off by the drainage tubes. In this way absorption took place slowly and the patients were saved from the primary, overwhelming dose of toxins, which is so fatal.

(e) *The administration of antitoxins and other substances to antidote or dilute the immediate depressing effects of the poisons absorbed from the peritoneum.* Antistreptococcus serum and unguentum Credé were administered to our patients, on the conviction that they contributed to this result to some degree. We believe that time is saved by their administration, in counteracting the effects of the poison, and the patient's chances for recovery are, therefore, increased. Saline transfusions were given some of the patients for the same purpose, as well as to increase the arterial tension when low.

(f) *The length of time the patient is kept under the anesthetic and the extent of manipulation of the intestines and other tissues to which the patient is subjected during the operation.* The patients were not killed on the table. I believe a large number of lives are sacrificed in operations for general peritonitis by excessive manipulation of the infected tissues and by sponging and irrigation of the peritoneal cavity. If the patient becomes severely depressed, collapsed or shocked on the table, it is practically certain that death will ensue; and, therefore, no operation which produces these conditions is justifiable. In all of these cases a general anesthetic was used, as it is my belief that sufficient time can be saved by working under general anesthesia to more than compensate for the dangers attending its use, and time is of vital importance in operations of this character.

The following report will illustrate the various phases of the individual cases:

CASE 1.—Mr. J. D., aged 35 years, laborer. Admitted to Mercy Hospital, Nov 18, 1902. Patient referred to me by Dr. D. Collins, with diagnosis of typhoid perforation.

PRESENT ILLNESS.—The patient was in the third week of a well-defined attack of typhoid fever and was progressing favorably. At 3 p. m. on the day of admission to hospital he experienced a sudden, severe, sharp pain in the umbilical region. Soon after onset of pain it became general over the lower half of the abdomen, he vomited and a considerable degree of tympany developed. When I examined him at 8 p. m. he was in the semi-sitting position and the abdomen was moderately distended and tender all over. On percussion there was tympany over the upper part, with dullness in the right flank and lower portion of the abdomen. The line of dullness changed with change in position of the patient. Dr. Collins' diagnosis of typhoid perforation was sustained and patient immediately sent to hospital for operation. In conveying him from his house to the hospital he was kept in the semi-sitting position on the stretcher and this position was maintained on the table throughout the entire operation. Ether was the anesthetic used. The pulse before beginning the anesthetic was 130 and respiration 30; rapid, shallow and entirely costal in type. There was, however, in this case, an absence of the symptoms of collapse. Camphorated oil, minims 10 and strychnia sulph gr. 1/30 were given hypodermically before starting the anesthetic.

Operation.—10 p. m. Incision below the umbilicus and through the right rectus muscle was made in opening the abdomen. As soon as the peritoneum was incised a large quantity of yellowish green fluid containing flakes of lymph exudate, welled out of the opening. This fluid was free in the peritoneal cavity and there were no adhesions. The entire peritoneal surface was deeply congested and covered in places with white patches of exudate. The luster and gloss of the membrane were, however, preserved. The caput coli was first sought and drawn out of the wound, and the ileum traced from here. On drawing the latter out it was found greatly thickened in places and its peritoneal covering showed the most intense degree of congestion and infiltration. About twelve inches from the ilio-cecal valve a perforation of the intestinal wall was found, 4.5 m.m. in diameter, through which the contents

of the ileum were escaping. The perforation was in the center of an indurated, infiltrated, Peyer's patch, and there were no evidences of the formation of adhesions in the neighboring intestinal coils. The perforation was closed by a double row of silk Lambert sutures, introduced in the healthy tissue, well to the side of the infiltrated Peyer's patch. In this way the bowel wall was folded inward longitudinally, from each side, and it completely buried the ulcer, with the perforation in its center. When the suturing was completed the lumen of the bowel was considerably narrowed, but this was unavoidable, as any sutures introduced into the infiltrated tissue would have torn through. After closing the perforation the coil was dropped back into the abdomen and the incision closed in separate layers, catgut for the peritoneum and fascia of the rectus and horsehair for the skin. The fluid was not sponged out. Two rubber drainage tubes, ½ in. in diameter, were inserted deep into the pelvis, and came out through the lower end of the incision. Through these tubes the pelvis was irrigated with normal saline solution and a large quantity of greenish fluid escaped. The pulse became very weak and rapid towards the end of the operation, so a quart of normal saline solution was given intra-venously. Time of operation, 27 minutes.

Patient was returned to his room at 10:40 p. m. and placed in bed in a semi-sitting posture at an angle of 40 degrees. This position was maintained for ten days. After he was put to bed his pulse was 140 per minute and weak. Camphorated oil, minims 10 and strychn. sulph. gr. 1/30 were given hypodermically. At 11:30 pulse was 140, very weak, and respirations 40 per minute. A second intra-venous transfusion of 203 normal saline solution was given and hypodermics of: caffein gr. 2, camphorated ether minims 10, strychn. sulph. gr. 1/30, and digitalin gr. 1/50, ordered every four hours. At 12 p. m. 10 c.c. of antistreptococcus serum was given hypodermically and the dose repeated at 3 and 6 a. m. He rested quietly during the night except when disturbed to take his medicine; passed urine freely. The pulse gradually became slower and stronger and by 8 a. m. was 100 per minute, with temperature 99 (Ax) and respirations 34. Wound was dressed and the dressings found saturated. Inunctions of ung. Credé were ordered daily. At 11 a. m. pulse again became weaker and he was given a saline enema, which was retained. P. m. temperature 100.6, pulse 100. Saline enemata were repeated after this every five hours and water given freely by mouth after 6 p. m. the day following the operation; the urine showed albumin and hyaline and granular casts.

November 20, a. m., temperature 101.4, pulse 96, respirations 26. He had a good night and expressed himself as feeling well. He vomited several times during the day, complained of some epigastric pain and slept at intervals. The camphorated ether and caffein which had been given hypodermically every four hours were stopped, but the digitalin and strychnin sulph. were continued. His pulse during the day decreased in frequency from 100 in the morning to 86 at 6 p. m., at which time his axillary temperature registered 100.6 and respirations 28. 1,300 c.c. of urine was excreted during the 24 hours. Bowels did not move, and he retained his enemata. Urine still contained albumin and casts (hyaline).

November 21, a. m., temperature 99 (ax.), pulse 68, respirations 30. Patient did not sleep much during the night, but rested quietly. He vomited several times during the day and developed a slight cough, with moderate amount of expectoration. During the afternoon two low enemata were given at intervals of four hours, and produced slight bowel movement. P. m., temperature 101 (ax.), pulse 88. Digitalin stopped. Urine abundant.

November 22, a. m., temperature 99.6, pulse 76; p. m., temperature 100.6, pulse 80. Bowels moved freely. Slight cough persists and sputum blood tinged.

November 23, a. m., temperature 98, pulse 70; p. m., temperature 99.6, pulse 74. From this date pulse and temperature remained practically normal and patient convalesced rapidly. He sat up in chair December 8. Drainage tubes were gradually shortened and diminished in size as the discharge lessened, and

were removed altogether Dec. 10. He was discharged from the hospital with wound almost entirely closed December 12.

CASE 2.—Mr. F. B. T., aged 26 years. Admitted to Frances Willard Hospital July 12, 1902.

Previous History.—Negative. Family history, negative.

Present Illness.—Three days previous to admission to hospital patient was attacked with severe pain in the right iliac fossa, accompanied by nausea and vomiting. Temperature reached 100 on the evening of the attack. The next day the pain was more circumscribed and remained so until the morning of the third day, when it suddenly became general over abdomen, and considerable tympanitic distension of the abdomen developed at the same time. It was decided that the patient had a perforation of his appendix, with general peritonitis. He was transported seven miles in a wagon to the railway station and four hours on train to Chicago. When he arrived here his pulse was 130 and temperature 101.5. Abdomen was much distended and flat on piano percussion in the flanks and lower portion. Leucocyte count on the evening of the third day showed 50,000 per cubic mm.

A diagnosis of perforative peritonitis was made, though the patient was not vomiting and not in the least collapsed.

Operation.—July 12, 1902. Abdomen opened by ordinary appendiceal incision through outer edge of right rectus muscle. When the peritoneum was opened pus with gas shot out, so great was the tension. The appendix was gangrenous and perforated. Appendix removed and large drainage tube inserted into the pelvis and right iliac fossa. No abdominal sponging or irrigation was used. There was no attempt on the part of the intestines or omentum to wall off the infective process. The bowel retained some of its normal gloss, but the pus was very offensive and the case did not look promising. Abdomen closed by figure of eight sutures of silkworm gut down to the drainage tubes.

Patient was placed in his bed in the semi-sitting position, at an angle of 35 degrees. Repeated saline enemata were administered and large quantities of fluid given by mouth immediately after the patient regained consciousness. The tubes were left in for two weeks, but during this time were gradually shortened as the discharge lessened. The temperature rapidly subsided to normal after the operation and the patient made an uninterrupted recovery. In this case, as in most of the others, inunctions of ung. Cr  d   were given daily for one week. Anti-streptococcus serum was not given.

CASE 3.—Mrs. K., aged 50. Admitted to Mercy Hospital Oct. 12, 1902. Family history negative. Personal history negative.

Present Illness.—After breakfast, October 9, patient was taken suddenly ill with severe cramping pain in umbilical region. Soon after onset of pain she became nauseated and vomited freely. Pain continued general over abdomen for sixteen hours, when it became localized to the right iliac region and vomiting, which had been persistent, subsided. She had fever during this time, but does not know how much, and was very tender to pressure in the appendiceal region. After 36 hours pain lessened, but soon afterwards reappeared and was severe. It was now general over the entire abdomen and not localized to the right side. I saw the patient in consultation with Dr. George W. Webster on the evening of October 12, and concurred in the advisal of immediate removal to the hospital and operation.

Operation.—October 12, 10:30 p. m. Usual appendiceal incision through the right rectus muscle into the peritoneal cavity. On incising the peritoneum pus welled out. There were absolutely no adhesions anywhere in the peritoneal cavity, and the pus was distributed everywhere. The appendix presented considerable swelling and was perforated near its base, the perforation taking place into the free peritoneal cavity. No fibrinous exudate was found on the intestines, and there was no effort at agglutination. After ligating the mesentery and appendix, the latter was amputated. Two large rubber drainage tubes, 1/2 inch in diameter, were inserted, one deep in the cul-de-sac and one in the right iliac fossa. The abdominal wall was closed with figure of eight sutures of silkworm gut. No

irrigation was used and the pus was not sponged out. In this case the peritoneum showed considerable congestion, but the normal gloss was retained, showing that the endothelial covering was intact. Patient was put to bed in sem-sitting posture at an angle of thirty-five degrees. With each inspiration the pus welled out of the pelvis through the tubes. At 11:15 p. m. pulse was 120, and at 12 120, with respirations of 40. As soon as she was put to bed she was given strychnia sulph. gr. 1/20, digitalin gr. 1/50, caffein cit. gr. 2 hypodermically.

October 13, patient rested quietly during night and vomited only a few times. She took water freely and retained much of it; a. m., temperature 99.8, pulse 98; p. m., temperature 101, pulse 104. Hypodermics of strychnia and caffein were continued every four hours. Dessertspoonful doses of the infusion of digitalis were ordered every three hours to increase the secretion of urine, which was small in quantity and contained considerable albumin and many hyaline casts. Patient vomited only once during the day and took water freely.

October 14, patient had good night; a. m., temperature 99.2, pulse 98, respiration 30; p. m., temperature 99.6, pulse 96. Urine now abundant, no albumin present, but hyaline casts still numerous. About noon patient was given a saline enema and this was followed soon afterward by a slight bowel movement. She had two more small passages during the afternoon. In the evening the following prescription was ordered every six hours: Ox gall grs. 5, ex. belladonna gr. 1/20, ex. nuxvomica gr. 1/4, aloin gr. 1/10.

October 15, a. m., temperature 99.2, pulse 96; p. m., temperature 99.4, pulse 88. Patient expelled considerable gas from bowels, but did not have a free movement. Wound was discharging freely.

October 16, during the preceding 24 hours patient passed 1,500 c.c. of urine, which contained no albumin and very few casts. The infusion of digitalin discontinued, as were also the hypodermics of caffein; a. m., temperature 99.8, pulse 90; p. m., temperature 99.6, pulse 96. During the day patient had five bowel movements and passed a good deal of gas.

October 17, a. m., temperature 99, pulse 96; p. m., temperature 100.2, pulse 84. From this date until October 21 temperature in the evening ranged between 99.6 and 100.4, with pulse 88 to 96. The discharge continued quite profuse and was somewhat offensive. Bowels moved daily during this time and she complained but little of pain in abdomen. From October 21 to November 4 p. m. temperature ranged from 99 to 99.6, with pulse from 82 to 90. During this time the discharge decreased in quantity and the wound was dressed with gauze soaked in a saturated solution of sodium bicarbonate to overcome the offensive odor. She complained little of pain; bowels moved freely daily and urine was abundant. The drainage tube in the right iliac fossa was removed October 25 and the pelvic tube four days later.

November 4, patient complained of pain and tenderness in the left iliac fossa and her temperature on this date went up to 101 in the afternoon. The next day a tender induration was palpable in this region and it was evident that pus was here retained. Induration and temperature persisted until November 8, when the accumulation discharged spontaneously into the canal left after removal of the drainage tube. After this her temperature rapidly descended to normal and continued so. Patient sat up in chair November 8, and was discharged from the hospital November 23, with the wound almost healed.

CASE 4.—R. G., male, aged 16 years. Referred by Dr. Anna Dwyer.

Previous History.—During past three years had been subject to frequent attacks of abdominal pain, at times localized in right iliac fossa; no severe acute attacks. Present illness began October 18, 1902, with intermittent abdominal pain, which continued until next afternoon, when he vomited. Pain generalized at first, later localized in right iliac region. Cathartics were administered by attending physician, but were not retained. Vomiting continued for 18 hours, when it became less frequent; the pain, however, remained severe. At 4 p. m., October 20 temperature was 101.2 and pulse 100. A well-

defined mass was present in the right iliac fossa. The author saw the case at 9 p. m. and advised immediate operation, but to this the parents would not consent. The next day the abdominal pain had increased greatly in severity and was generalized over the abdomen. Simultaneously with the increase and generalization of the pain the tumor mass became much less clearly defined and diffuse tenderness developed.

Operation.—Performed 7:30 p. m., October 21. The usual incision was made through right rectus muscle, into the peritoneal cavity. On incising the peritoneum the pus welled out and was free in the peritoneal cavity; with no adhesions except immediately around the appendix. The peritoneum was intensely congested and covered in places with fibrinous exudate. The gloss was preserved except in certain areas, where the congestion was most intense. The appendix was gangrenous and perforated on one side into the free peritoneal cavity. A large fecal concretion was present. Appendix was amputated and stump buried. Two large drainage tubes were inserted—one into the pelvis and the other into the right iliac fossa. Abdomen was closed with separate layers. No sponging or irrigation used. Patient placed in bed in semi-sitting position at 37 degrees.

At 8 p. m. pulse was 152. Strychnia sulph. gr. 1/30 given and repeated every three hours. At 9 p. m. 10 c.c. anti-streptococcus serum given hypodermically, and this dose was repeated at 11 p. m. and 2:30 a. m. Inunctions of ung. Credé given at 9:30 p. m. and 2:30 a. m. At 10 p. m. temperature 103 (ax.), pulse 140, respirations 24. Up to this time had drank five glasses of water since coming out of anesthetic. Rested quietly during the night and vomited only once.

October 22, a. m., temperature 102.6, pulse 120, respirations 36. Dressings saturated with discharge from tube. At 10:20 a. m. high saline enema given and ordered repeated every two to three hours. Water given freely. P. m., temperature 102.6, pulse 120, respirations 34. Patient given small dose of saline cathartic at 2:15 p. m., which was followed at 4:30 by a slight bowel movement and again at 7:30 in the evening. No vomiting.

October 23, patient had good night. A. m., temperature 101.4, pulse 100, respirations 28. Had one good bowel movement and expelled a great deal of gas from the bowels, both spontaneously and after enemata; p. m., temperature 101.4, pulse 92, respirations 30; wound discharging freely.

October 24, a. m., temperature 101.4, pulse 88, respirations 30. Wound dressed and 1½ inch of upper drainage tube removed. The gauze drain, which was left in with the upper drainage tube, was loosened. P. m., temperature 101.4, pulse 84, respirations 26.

October 25, a. m., temperature 100, pulse 80. Wound dressed and a portion of the gauze drain removed. P. m., temperature 100.6, pulse 80.

From this date until October 31 temperature ranged between 100 and 101 in the afternoon, with pulse gradually lessening in frequency from 80 to 76. After October 31 it remained normal morning and evening. October 28 sutures and gauze packing were removed. November 4 drainage tube was entirely removed and discharge was very slight. Patient was kept in bed in the semi-sitting position until November 7, when he first sat up. After this date wound healed rapidly and he made an uninterrupted recovery.

CASE 5.—Mr. E. H., aged 19 years, occupation printer. Admitted to Mercy Hospital Oct. 25, 1902. Family and previous history negative.

Present Illness.—Began suddenly four days before admission with severe cramping pains in abdomen. Pain at first was more or less general and was followed after a few hours by nausea, vomiting and temperature of 102 F. After 24 hours the nausea and vomiting subsided, but the pain persisted and gradually localized in the right iliac region, where it remained for 72 hours. Temperature at this time was 101 to 102 F. At the end of third day the pain suddenly became more severe and spread over the entire abdomen. He had a chill, followed by profuse perspiration and the temperature rose to 103 F. When admitted to the hospital the next day, abdomen was

moderately distended and extremely tender all over. Breathing was almost entirely costal and the abdominal muscles held so rigidly that deep palpation was impossible. On piano percussion there was dullness extending up almost to umbilicus. An absence of peristalsis existed all over the abdomen.

A diagnosis of perforative appendicitis with general peritonitis was made and patient at once prepared for operation.

Operation.—Ether anesthesia. The usual appendiceal incision made through the outer margin of the right rectus muscle, into the free peritoneal cavity, which was found to contain a large quantity of yellowish pus, possessing a slight odor. The appendix was gangrenous and perforated. A circumscribed abscess had ruptured into the peritoneal cavity. The intestines were everywhere bathed in pus, but though considerably congested, they still retained their endothelial covering. Appendix was removed. Perforated rubber drain, one-half inch in diameter, inserted into most dependent portion of pelvis, and also into right iliac fossa. The pus was not sponged out, nor was the abdomen flushed. Time of operation 20 minutes.

Patient returned to his room at 1:30 p. m. in fair condition, pulse 128. Placed in semi-sitting position at 35 degrees and kept there for six days. When he regained consciousness three pints of normal saline solution was given per rectum and was retained. Temperature at 5 p. m. was 100 (ax.). At 6:30 p. m. 10 c.c. anti-streptococcus serum was given hypodermically, and this was repeated at 9 p. m. and again at 12. A second enema of normal saline solution was given at 7 p. m. and retained. At 9 p. m. temperature was 101 (ax.), pulse 120 and respiration 34.

October 26, a. m., temperature was 101.8 and pulse 106; p. m., temperature 100.6, pulse 112. Water was given freely and most of it retained. He vomited only twice during the day and his bowels moved freely three times, after being started by an enema given in the morning. One quart of saline solution was given per rectum every four hours, and 20 minims nuclein hypodermically at the same intervals. Urine was passed freely.

October 27, patient complained of some pain across abdomen; wound was dressed and a large amount of sero-purulent discharge found on the dressing. A. m., temperature 100 and pulse 100; p. m., temperature 100.8, pulse 100. Inunctions of 40 grains ung. Credé ordered daily. Bowels moved freely and urine was abundant. Patient complained very little of pain in the abdomen and rested well.

October 28, a. m., temperature 99.8, pulse 88; p. m., temperature 100, pulse 86.

October 29, a. m., temperature 98.5; p. m., 99.4. Ung. Credé stopped and soft diet ordered.

October 31, wound dressed and very slight discharge found on dressing. Nuclein discontinued.

Highest temperature 99.4 in the afternoon.

Temperature reached normal November 2 and remained so until the 10th, when he developed a slight pleurisy, which caused an elevation to 100 for four days. It then again dropped to normal. Patient made an uninterrupted recovery, sat up December 2 and was discharged well December 10. Drainage tube was gradually shortened and reduced in size as the discharge lessened. It was removed altogether November 19.

CASE 6.—Mr. F. McC. Admitted to Mercy Hospital Nov. 8, 1902. Family history negative. Personal history negative.

Present Illness.—About one month before onset of present trouble patient had a well-defined attack of appendicitis, lasting four days and from which he apparently completely recovered. He worked steadily from that time until onset of present attack. About 3 o'clock on the morning of November 8 patient was awakened by very severe, sharp pain in abdomen, about umbilical region. Soon after onset he became nauseated and vomited freely. Bowels did not move. He had no chill and temperature was not above 100 F. Symptoms continued until 8 o'clock a. m., when nausea and vomiting disappeared. He walked to the hospital, and was accompanied by his attending physician when admitted. Pain was still severe and abdominal muscles rigid, especially on right side. Tenderness to pressure was general over abdomen, but not very acute. A

diagnosis of acute appendicitis without perforation was made and patient persuaded to have an immediate operation. He came in during a clinic and one-half hour afterward was on the operating table.

Operation.—Nov. 8, 1902. Usual appendiceal incision through outer border of right rectus muscle, into peritoneal cavity. To our great surprise, on incising the peritoneum, it was found full of free pus with some gas. Examination revealed a perforation of the appendix. The perforation had been capped with the omentum, but through some accident on the night preceding his admission the cap was partially torn from opening and the contents had escaped into the peritoneal cavity. The probe could be inserted into the lumen of the appendix; the peritoneum was not "blistered," and its gloss was not seriously disturbed. The lower half of the abdominal and pelvic cavities contained large quantities of pus. Appendix was amputated; two large drainage tubes were inserted into pelvis. With each inspiration pus welled out of the tubes.

Patient was returned to his room at 1:15 and placed in bed in semi-sitting position, at angle of 35 degrees. Pulse 104 when he recovered consciousness. He vomited small quantity of greenish fluid, was restless and complained of pain in wound. At 6 p. m. pulse was 78 and temperature 99.4. At this time he was given $\frac{1}{2}$ gr. calomel and the dose was repeated at one-half hour intervals until 3 grains were given. At 6, 8 and 12 p. m. anti-streptococcus serum was given hypodermically in doses of 10 c.c. He slept some during the night, vomited once after taking *Sii mag. sulph.*, and at 4 a. m. was given a high rectal enema, which produced a free bowel movement. 300 c.c. of urine was passed.

November 9, a. m., temperature 99.4, pulse 92; p. m., temperature 100.6, pulse 108. Nuclein solution M. 20 was ordered every four hours, and injections of ung. *Credé* gr. 45, daily. Towards evening patient was restless and slightly delirious. November 10, a. m., temperature 98.8, pulse 88. Good bowel movement followed high enema. Still quite restless and slightly delirious at times. Complaints of some pain. P. m., temperature 99.2, pulse 90. Calomel was given in divided doses, followed by mag. citrate, $\frac{5}{16}$. Bowels moved twice. Wound was dressed and moderate amount of discharge found on dressing. November 11, a. m., temperature 99, pulse 76. Patient resting much more comfortably and bowels moved freely. P. m., temperature 100, pulse 84.

November 12, a. m., temperature 98.6, pulse 82; p. m., temperature 99, pulse 82. From this date until November 20 temperature ranged from 99 in the morning to 101 in the afternoon. On November 20 it reached normal in the afternoon and remained there until his discharge from the hospital. The drainage tubes were kept in for ten days, the tube being gradually shortened and diminished in size from time to time as the discharge lessened in amount. Dressings soaked in a saturated solution of sod. bicarb. were applied to the wound when the discharge was profuse to overcome the offensive odor, which persisted for six or eight days. Patient left the hospital December 6 cured.

This case illustrates forcibly what I have taught for years: That there is little or no depression immediately after perforation of the intestine and no collapse. In other words, collapse is a late manifestation and is the expression of the "blistering" of the peritoneum and absorption of the products of infection.

In this patient's case absorption did not have time to occur, as he was operated on ten hours after perforation took place. It will be noted that this patient was walking about the street with his physician, with his abdomen full of pus and a direct opening from his appendix into the free peritoneal cavity. Neither did I suspect the condition when I examined him before the operation.

No Medical Advertisements to the Laity.—A peculiar provision of Spanish law is that pharmacists are prohibited from advertising medicines or remedies in any papers but journals of medicine, surgery or pharmacy.

FUNCTIONAL TESTS OF HEARING: SOME OF THE PRINCIPLES ON WHICH THEY ARE BASED.*

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CHICAGO.

The object of this paper is to call attention to the value of some of the functional tests of hearing and to the principles on which they are based. Wm. H. Thompson has recently made the significant statement that a knowledge of diseases of the ear is of more value to the general practitioner than that of all the other special senses put together. This being true, a knowledge of the more accurate methods of diagnosis and prognosis becomes a question of prime importance. The functional tests of hearing are of greatest value in that large and oftentimes perplexing group of diseases of the non-suppurative type which affect the middle ear and labyrinth.

No one doing ear work can claim to be abreast of the times if he does not have an intimate and comprehensive knowledge of the principles underlying these tests. They are to the otologist what the ophthalmoscope is to the oculist, or the stethoscope is to the one skilled in diseases of the chest.

It has been a source of some surprise to me to hear otologists of good repute refer to the functional tests of hearing as being of very limited value for diagnostic purposes. I may be pardoned, therefore, for making the following remarks on this subject:

In order to place it more clearly before us for discussion I will first state the principles on which the tests are based.

First Major Principle.—The range of hearing in adults under 55 years of age is approximately 16 to 48,000 vibrations per second. After the fiftieth or fifty-fifth year the hearing for the upper tones is somewhat reduced, as has been shown by Zwaardemaker, Bezold and others. The very aged do not, as a rule, hear tones higher than 37,000 vibrations per second. This should be borne in mind, as the case might otherwise be mistaken for one with labyrinthine deafness.

Under the first major principle may be grouped two secondary principles which only serve the purpose of elaborating or elucidating it. They are as follows:

(a) Anything which disturbs the normal tension of the drumhead and ossicular chain will diminish or abolish the hearing for the two or three lower octaves.

(b) Any disease affecting the perception apparatus will diminish or abolish the hearing for the upper tones of the range of hearing.

Second Major Principle.—Hearing by bone conduction is approximately one-half as long as hearing by air conduction.

This rule is subject to considerable variation in normal ears, but for practical purposes in the study of these principles we do not need to make a closer analysis. The point to be borne in mind is that hearing by air conduction is longer than by bone conduction.

The second major principle may be still further elaborated or elucidated by two secondary principles, namely:

(c) Hearing by bone conduction is increased in those affections of the middle ear which disturb the normal tension existing between the drumhead and ossicular chain.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, C. R. Holmes and G. H. Makuen.

(d) Hearing by bone conduction is diminished or abolished in affections of the labyrinth or perception apparatus.

Third Major Principle.—The intensity of hearing by bone conduction is either increased or diminished by morbid conditions within the middle ear or labyrinth. Two secondary principles may be given in this connection, namely:

(e) Any disturbance of the normal tension existing between the drumhead and ossicular chain will increase the intensity of hearing by bone conduction.

(f) Any disturbance of the perception apparatus will diminish the intensity of hearing by bone conduction.

With these principles in mind we are prepared to discuss their application to the purposes of diagnosis and prognosis.

After having made a careful history of the case, including all subjective and objective phenomena, it has been my custom in both clinical and private practice to test the range of hearing with tuning forks for the lower seven octaves, and with the Galton whistle for the remaining or higher limit of hearing. Note should be made as to whether the lower or higher tones are not heard. According to the secondary principles, *a*, if the lower tones are not heard middle ear or tubal disease is probably present. If the upper tones are not heard it is presumptive evidence of labyrinthine disease, as is shown in secondary principle *b*. Hence, the examination as to the range of hearing is of great value in determining whether the deafness is due to middle ear or to labyrinthine involvement. Thus, if a given case does not hear forks below, say 256 vibrations per second, we would be justified in assuming it to be one of middle ear disease; whereas, if the upper tones of the Galton whistle are not heard it is fair to assume that the labyrinth is involved.

There are exceptions to these conclusions, one being in those cases well advanced in years, when the upper tone limit is normally reduced; another is when there is marked retraction of the drumhead, forcing the footplate well into the oval window. The tension of the intralabyrinthine fluid is thereby increased, and may give the usual functional signs of true labyrinthine disease. The signs will quickly disappear, however, on inflation of the tympanic cavity, and thus clear the diagnosis.

As shown in the second major principle, hearing by bone conduction is approximately one-half as long as it is by air conduction. If, in a given case, bone conduction in the affected ear is relatively longer than hearing by air conduction, the disease is probably within the middle ear. If the Weber test is performed the sound will lateralize to the affected side; or if the Rinne test is made the result will be negative Rinne, i. e., hearing by bone conduction will be longer than by air conduction.

If, on the other hand, bone conduction in the affected side is relatively diminished in duration, it is probably one of labyrinthine involvement. The Weber tests will lateralize to the good or better ear rather than to the more affected side, while the Rinne and Schwabach tests will show a relatively diminished hearing by bone conduction on the affected side. In pronounced cases the hearing by bone conduction is entirely lost in the affected ear.

It is apparent, therefore, that a knowledge of the foregoing principles will render the functional tests of the organ of hearing comparatively easy to comprehend. It is easier to comprehend principles than it is to comprehend tests without a knowledge of the principles on

which they are based. It is, therefore, well to group the tests under the principles which they elucidate. Thus, under the first major principle we may place the test for the range of hearing by the tuning fork and Galton whistle, making note as to whether the lower tones (sub-principle *a*) or the higher tones (sub-principle *b*) are lost.

Under the second major principle we may place the Weber, Schwabach and Rinne tests, as they show the relative duration of hearing by bone and air conduction.

Under the third major principle we may also place the Weber test, as it shows the relative intensity of hearing by bone conduction in the two ears.

And so we may classify all the functional tests of the ear under the various principles which they elucidate. Much confusion arises from a failure to comprehend the principles on which they are based, each test being used as an arbitrary or empiric method of determining the nature and location of the lesion causing the deafness. A better and simpler way to approach this subject is to first study the principles on which the tests are based and then group them according to the principle or principles they are supposed to explain. In this way the various tests and their individual and collective significance will afford a means of greater discrimination in the diagnosis and prognosis of many ear diseases which would otherwise be but partially understood.

There is not time within the limits of this paper to enter into a discussion of the relative merits or significance of the various tests. I wish to say, however, that it is rarely safe to draw conclusions from any single functional test. The composite of several tests, together with the history and clinical phenomena, should all be considered in making the diagnosis.

DISCUSSION.

DR. A. H. ANDREWS, Chicago—I think this is a good time to mention the importance of the entire subject of otology. I think that in most of the medical colleges of the United States it is a sadly neglected subject. I will say, further, that it does not seem to be the fault of otologists, but rather the fault of those who have the arranging of the curriculum of the various colleges that it is not given greater prominence. Medical students need not be specialists, but they ought to know enough to do something with diseased ears. The Doctor states that the relation between air conduction and bone conduction is approximately as 1:2. That is no doubt approximately true, but it makes a great difference on what part of the mastoid the handle of the tuning fork is placed. If it is placed immediately behind the auricle the patient will hear it much longer than if it is placed above or below. If the handle is pressed tightly against the mastoid he will hear it considerably longer than if it is pressed lightly. All these things should be borne in mind in testing bone conduction. Another point is the importance of testing in the first examination both before and after inflation of the tympanic cavity. Sometimes the relation between air conduction and bone conduction will be reversed after inflation. In very many cases it will be materially modified. Not only is this important from the standpoint of functional examinations, but it is very important in making a prognosis. Further, in making tests of bone conduction we will sometimes find that one fork is not heard as well by bone conduction as another fork. I have often seen cases where the C 2, 512 vibrations was not heard as long as a higher fork or a lower fork. I mention the C 2 fork because that is the one most frequently used in testing bone conduction. I have never seen a case of labyrinthine disease in which the intensity of bone conduction was increased. In testing ears with tuning forks we should bear in mind the necessity of having accurate forks and forks that are free from overtones. A fork with overtones will often give very different results from a fork free from overtones. Hold the fork by the handle and strike with a pencil on about the middle of the

prong, and if it gives a ring it has overtones and is not desirable; but if it gives a dead sound, you will then probably get a pure, clear tone and the fork is of value in making these tests.

DR. G. MCAULIFFE, New York City—In dealing with cases of neurasthenia or allied conditions of nerve exhaustion, we should not hold the tuning fork too long in front of the ear. After resting the nerve if we will again approach the ear they will again appreciate the sound. If we do not do this we would get a shortened perception. Another point, in trying the Weber test—which I find the most unreliable one—is to place the fork underneath the mastoid, at the beginning of the sternomastoid. I have been able to get the proper response to the Weber test by this procedure.

DR. S. VOORHEES, Elmira, N. Y.—I would like to ask the Doctor if he does not find, for instance in labyrinthine disease, the higher tones are lost and the lower tones only recognized.

DR. B. A. RANDALL, Philadelphia—I think it is extremely important to get forks that are somewhere near what they purport to be. On testing on the kymographion the various forks furnished you will get some very peculiar results. It is very seldom that they will give the rapidity of vibration set down for them. Second, the value of the fork should be expressed in the frequency of the vibration and not by a symbol, which is so varying in its employment that the term "C fork" may represent at least three different octaves. It is better to employ the complete double vibration instead of the half vibration, as is done by most continental workers. Third, the blow struck should have some semblance to standardization, and in the tuning forks we should have some idea of the bulk of metal vibrating. Not too much of the metal should be in the handle, which should be long in high tuning forks, lest the fork be really heard largely through the air when resting on the head. If we are stating that a fork of, say, 213 1/3 d.v.s., is heard after a standard blow for so many seconds, let us have a standard that it has fallen its own height, that it is of such a length and such a weight. Then when men having different sized forks get different results we will have some clew as to why their results appear different when they are really the same. These things are extremely important; they are really fundamental to any understanding of the matter.

DR. WILLIAM L. BALLENGER, Chicago—In reply to Dr. Voorhees, as a general proposition there will be a loss of hearing for higher tones. The paper I left at home is a discussion of just such subjects as have been brought up in the discussion. It gives the technic of observation and testing and is intended as an answer to such objections. This paper only deals with the general principles.

THE TREATMENT OF TRAUMATIC GANGRENE OF THE EXTREMITIES.*

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SIOUX CITY, IOWA.

In this brief paper it is my aim simply to call attention to a procedure which, in my experience, has proven of great utility in the management of these very troublesome and too often fatal cases. I shall not take up the pathology of traumatic gangrene, for with that you are all familiar, but shall confine myself to its treatment.

On referring to the literature we find all authorities agree that the only treatment of this class of cases consists in early amputation above the gangrenous area.

How often are we able to determine accurately the limits of the disease, particularly in those cases of rapidly spreading moist gangrene? Too often we are disappointed by the continuation of the process after amputation, and are compelled to reamputate much higher, in spite of which the patient often dies.

Again, if the gangrenous process does not involve the entire limb the flaps frequently slough, necessitating another operation and the sacrifice of what is too often

most valuable tissue so far as the future usefulness of the part is concerned.

In other cases I have been convinced by subsequent events that in my effort to get well above the disease I have sacrificed tissue which might have been saved. In other words, I have amputated at a higher point than necessary. The occurrence of any of these conditions neither contributes to the welfare of the patient nor to the peace of mind of the surgeon, and we are all anxious to avoid them as completely as possible.

In casting about for the probable cause of the unsatisfactory course pursued by many of these cases I became convinced that it was the attempt to form flaps from tissue the vitality of which is always seriously in question and the further impairment of that vitality by two procedures necessary to this method of operation. First, the dissection of the flaps; second, the introduction of sutures.

The dissection of the soft parts into suitable flaps necessarily interferes with its blood supply, which interference in the class of cases under consideration is often illy born and frequently resented by sloughing of the flaps or the rapid extension of the gangrenous process up the limb. The introduction of sutures at this time has two distinct disadvantages. The first is the retention within the wound of infectious elements which may have traveled up between the muscle planes or along tendon sheaths to a higher point than we believe probable.

The second is the further interference with the flap nutrition by the suture tension which, no matter how carefully they may be placed, can not entirely be avoided. Believing the statements above made to be true, and that the bearing of these facts on the results secured in these cases was most important, I began about two years ago to treat all cases of traumatic gangrene of the extremities by a method which was entirely original and of which I have been able to find no mention in the medical literature at my disposal.

The procedure is as follows: Being confronted with a case of traumatic gangrene of an extremity, estimate as exactly as possible the line between the diseased and healthy soft parts, and having first under anesthesia made a most careful and complete disinfection and cleansing of the skin, puncturing all bullæ and removing all discharges, envelop the gangrenous area in a sterile towel up to the line selected and at this point make a circular amputation, cutting through soft tissues and bone at the same level. Ligate carefully all bleeding points, including none of the perivascular tissue in the bite of either the forceps or the ligature.

Leave the wound absolutely open, not introducing a single suture, and apply moist dressings of gauze saturated with salt solution. The dressings to be changed two to four times in twenty-four hours, as the circumstances of the particular case demand.

After seven to ten days, if the wound is perfectly clean and the condition of the patient favorable, the classical circular amputation may be made by dissecting up the flap already outlined and sawing the bone at the proper level. If for any reason the circular method may seem undesirable, any other procedure may be substituted, but in the class of cases under discussion a typical circular amputation will be found entirely satisfactory.

I will not burden you with a report of cases, but will simply state that I have employed this procedure four times, once in the upper third of the thigh, once in the middle third of the forearm and twice in the upper third of the leg with uniformly good results.

* Read before the Iowa Association of Railroad Surgeons, Oct. 16, 1902.

CONCLUSIONS.

As my results by the old method can not be compared with these I have ventured to bring the procedure forward for consideration. Its advantages seem to me to be many and its disadvantages few.

1. By it we may speedily and with the minimum of shock remove from an enfeebled and exhausted patient the source of the infection, namely, the gangrenous tissue.

2. We may frequently make the amputation at a lower point than would be possible by the old method, because soft tissues whose vascular connections are left undisturbed are less apt to slough.

3. The freest possible drainage is provided for a sufficiently long time.

4. If the disease stops at the line first chosen no unnecessary sacrifice of tissue has been made, as the flaps have been defined at the lowest limit of safety and the bone would necessarily have to be sawn at the same point as at the second operation.

5. If the limits of the disease have not been placed sufficiently high the same procedure may be repeated with less danger to the patient than a typical reamputation.

6. Patients too weak and prostrated by sepsis to withstand a typical amputation may endure this much shorter procedure and be built up during the interval before the second operation is necessary.

I hope that use will be made of this method in the future management of these cases that its value may be more fully and satisfactorily proven or disproven.

POISONED WOUNDS BY THE IMPLEMENTS OF WARFARE.*

LOUIS A. LA GARDE, M.D.

MAJOR AND SURGEON, U. S. ARMY.

Mr. President and Fellows of the College of Physicians: In the first place allow me to thank you for permitting me to address the honorable College of Physicians in the capacity of Mütter lecturer. In looking over the names of the distinguished men who have preceded me in this function, I admit that your invitation was accepted with a great deal of hesitancy. I accepted the charge because of a sense of duty to my department, and because it has been my good fortune to serve in most of the principal seats of learning in this country, and my observations have led me to the conclusion that there is a deep bond of fellowship between the military surgeon and his brethren in civil life that is largely cemented by a mutual love of all that is lofty and inspiring in the healing art. Your opportunities to set the pace as we advance in scientific medicine are superior, and your liberality in imparting great truths as we come to drink anew at the fountain of knowledge are well remembered. In return for the kind attention which you are wont to bestow on us when we resort among you, I beg of you to accept this effort as a mark of the gratitude which the military surgeon owes his civil confrère.

In discussing poisoned wounds by the implements of warfare it will appear difficult to separate them from infected wounds by these implements, and justly so. The terms are considered interchangeable in this instance so far as they relate to the transmission of micro-organisms, and it was considered expedient to retain the former term in order to conform to the old

idea of poisoned wounds from poisoned arrows, lances, etc.

I. HISTORICAL.

The poisonous nature of wounds by the implements of warfare—especially those from firearms—has been dwelt on by the majority of the older writers. Frequent reference is made to the subject by John de Vigo, and Ambroise Paré was so imbued with the venomous nature of such wounds by reason of the powder, that he was wont to "cauterize them with oil of elders scalding hot, mixed with a little treacle." His trepidations in one instance when his boiling oil mixture ran out are graphically told by his biographer. In the absence of anything more efficacious he was driven to the use of yolk of eggs, oil of roses and turpentine in the treatment of the remainder of the wounded. After a sleepless night spent in anxiety for those who had not been given the conventional treatment of the day, by hot burning oil, he found, to his astonishment, that they had suffered but little pain, and their wounds were without inflammation and swelling, having rested fairly well the night before; the others, on whom the boiling oil was used, were feverish, with great pain and swelling about the edges of their wounds. Thus disinfection by heat as he practiced it gave results rather confusing and conflicting.

On the other hand, Thomas Gale, in his treatise of wounds by gunshot, attempts to refute the erroneous notion of Ambroise Paré, Jerome Brunswicke, John de Vigo, Alfonse Terrius and others concerning the venomous nature of gunshot wounds.

It is seen, therefore, that, from the beginning, the belief in the septicity or asepticity of gunshot wounds was indulged in. As to the value of the heat of ignition, if any, to purify the missiles as they issue from firearms, we will speak later.

Poisoned wounds from the use of so-called sidearms, or more properly speaking, cutting and stabbing implements, like the spear, sword, arrow-heads, knives, javelins, etc., have a very interesting literature, dating back to the days of the Greeks and Romans. A practice that is abhorred to-day and classed among the most cowardly deeds in the list of crimes, seems to have been pretty generally adopted in ancient times. For a complete account of the use of poisoned arrows, including an outline of the toxicology of the substances employed for the purpose by the ancient peoples of Europe, we are indebted to Gustav Lagneau. He points out that specimens of arrows gathered from the later paleolithic periods give proof that the art of poisoning arrows was known to the inhabitants of prehistoric times. Arrows made of bone to serve the points of javelins, lances, etc., are to be found in numerous archeological collections, and they suggest by the method of preparation that they were designed to carry poisons. Their surfaces show furrows and grooves, disposed parallel to the sides; grooves are also found on the teeth or serrated margins, for the reception of the poisonous matter, similar to what we find on the arrows of more modern periods.

The literature of historic times gives ample evidence of the use of poisoned arrows against man and beast. Thus Aristotle relates that the Celts in the hunt used poison on their arrows which was called *toxic*. After wounding a deer, for instance, it was considered necessary to excise the seat of injury at once, in order to insure the safety of the meat as food and to prevent rapid decomposition. The Gauls, according to Pliny, dipped their arrows for the hunt in hellebore, which had the

* The Mütter Lecture, delivered at the College of Physicians of Philadelphia, Dec. 2, 1902.

effect to make the meat more tender after excision of the wound area. These same people used an herb called *limeum*, which was known among them as deer poison.

Lagneau again cites numerous references to show that the Franks of the Rhine district and beyond used arrows dipped in the juices of numerous herbs that were so deadly that death was sure to ensue though the wound was trifling and in non-vital parts. The practice of using poisoned arrows in war became so frequent among the Franks that a law was inserted in their code in the fifth century to prohibit their use; the penalty on conviction being a fine of sixty-two and a half sous, or about sixty cents in our money. The same proscription was embodied in the Bavarian law later, although the penalty was not so great—the fine being a maximum of twelve sous. The Vandals, who originally inhabited North Germany, used poisons on their war implements, knives, lances, javelins. Pliny considered aconite the most deadly among the poisons so employed. The Europeans must have continued the practice of poisoning the implements of warfare to a late day, because M. Claude Bernard is said to have observed that Alonzo Martinez Espinoz, Porte-Arquebuse to Philippe III, admitted that a poison was manufactured by the Spaniards at that time from the root of the hellebore with which their implements were treated. Without extending the subject further it may be admitted from the copious references at hand that the peoples of Europe, generally speaking, engaged in the practice of poisoning the implements used in the hunt and in war. The practice is even known to have extended to the Scythians and the people of the far East.

The number and nature of the various poisons thus used on missiles and weapons like arrows, darts, javelins, swords, lances, battle-axes, etc., are commented on by Lagneau quite extensively. Of the vegetable poisons most commonly employed were extracts of hellebore, aconite, yew, limeum, nium, helenium and that of a certain fig tree. The poisonous nature of the former of these is recognized to this day, since we extract from them the powerful alkaloids, like veratrin, aconitin and taxin; while the nature of the latter, namely, limeum, nium, helenium and the fig tree mentioned are unknown to us now. Some of these poisons were said, like curare, to cause death when introduced through a wound, while they remained innocuous when ingested *per os*.

The poison materials were not confined to vegetable products alone. Ovid, who lived in exile about the Propontis, in the ninth century of our era, wrote on the custom of the nations of Eastern Europe, who, like the Scythians, poisoned their war missiles with venom of the viper, as well as the bile and blood of this reptile.

If we pursue the subject to more recent times we find that definite methods of poisoning missiles in warfare and for the hunt abide to this day with certain aboriginal peoples on the west coast of Africa, the South Seas, India, Indo-China, etc. Blood, decomposing viscera, snake venom and plant extracts are the substances usually employed. Siegfried in a general way tells us that "in Oceanica and the East Indies the plants employed are cardiac depressants; in the New Hebrides and some of the South Sea Islands the poison is like strychnin in its effects; in Africa various poisons are employed, including anthrax; and in the tropical waterways of the Amazon and Orinoco, curare and similar plant extracts." Ledantec, whose personal experiences had led him to suspect the poisonous nature of the arrows used by the latter, conducted some interesting

experiments in the laboratory at Nouméa, New Caledonia and at Bordeaux, the results of which confirm in a measure the presence and nature of certain poisons. The arrows of the natives of the New Hebrides are propelled from a bow. They are about three feet in length, composed of a shaft made of light material like reed cane, a middle part composed of a hard wood, with a sharp point fixed on the end of the latter. The point is made of a piece of human bone, usually from a long round hard bone like the ulna or fibula, brought to a sharp, slender point to invite fracture and lodgment of part of the missile on penetrating the tissues. These osseous points are coated with a dark substance resembling wet powder grains when they have been allowed to dry in mass. These powder-like bodies constitute the poison. In the Nouméa laboratory he used guinea-pigs. Under strict antiseptic precautions he inoculated the poison from old arrows previously moistened with bouillon, under the skin of the back and abdomen. His results were only partially successful; that is, he obtained the clinical picture of tetanus in some cases, such as contraction or extension of the posterior extremity, contraction of the muscles of the dorsal region, opisthotonos, etc. His later experiments at Bordeaux with the poison from fresh arrows, prepared only six months before, were attended with more definite results. A guinea-pig inoculated with the poison from the recently prepared arrows died very promptly, within twenty-four hours. The postmortem evidence, microscopic examinations of cultures taken from the blood of the heart, and subsequent inoculations into animals confirmed the presence of malignant edema. From this partial examination of the poison he concludes that: first, the bacillus of Nicolaier resides indefinitely in the arrow poison, because the clinical picture of tetanus was so clearly shown in the animal inoculated with the poison from the old arrows; and second, that the poison of the recently prepared arrows contains malignant edema in addition to tetanus, a supposition that is reasonable enough from his inoculation experiments as well as from our knowledge of the ready susceptibility of malignant edema to moisture.

The source of the poison is of itself interesting. From a native of the New Hebrides who resided at Nouméa the following method of preparing the arrows was learned: With a stone an incision is made in the bark of a tree called Dot. A milky fluid escapes, with which the arrow points are coated. This fluid, of rather thick consistency, serves the purpose of fixing the poison proper. The point of the arrow is now wrapped with thread, leaving a space between each round. The arrow thus prepared is dipped into the mud of crab-holes; after drying the thread is unwound, when the weapon is ready for use. It is supposed that the thread is removed to give the point a rough surface and to increase the area from which poison is absorbed.

The French have had occasion to observe the subject of poisoned arrow wounds a great deal in their Chinese possessions. Boinet and Hedón describe the arrows used by the Muongs in Tonkin, China, as made of bamboo 40 cm. in length, half a cm. in diameter and weighing six grams. Their points are coated with a brownish poison soluble in water; the solution resembles that of curare. On each arrow it is possible to recover 50 cg. of the poison. They experimented altogether on twenty animals, and sum up their work as follows: Three drops of a solution of 50 cg. of the poison to 10 grams of water deposited on the heart of a frog stops its beat

in seven minutes, and a centigram of the same solution subcutaneously administered is sufficient to kill a guinea-pig. Examination of the poison shows it to be made from the leaves of the *Antiaris toxicaria* or *Upas antiar*, the Javanese poison tree, a cardiac depressant.

The English have referred a great deal to the subject of poisoned arrows in their Indian service. Waddell, while professor of chemistry at Calcutta, examined the arrows prepared by the Akos, who occupy the Assam valley to the north of the Bramaputra. They use their poisoned arrows for large game and most effectively in warfare, as was shown on the Sepoys who operated against them some years ago. The physiologic effects of the poison on the arrows were those of aconite and the roots from which the poison was obtained belonged to a species of aconitum.

According to the researches of Gley and Lapique, strophanthus is one of the poisons used by some tribes in the center of Africa. An injection of one or two milligrams under the skin of a frog of the crude substance obtained from arrows and reduced to an aqueous extract, or two or three centigrams under the skin of a rabbit or dog, arrested the heart in systole in six to seven minutes. Analysis of the poison showed it to be *Strophanthus hispidus*.

Fraser and Tillie, who have studied the chemical properties and pharmaceutical action of the wood from which arrow poison is prepared by the Wa Nyika and other tribes of east equatorial Africa, confirm the presence of strophanthin as the poisonous agent on the arrows of these people. On frogs the prominent effects which follow the subcutaneous injection of large lethal doses are: slowing and intermittence of respiration, gaping of the mouth, often accompanied with straining movements like those of vomiting; fibrillary twitchings of muscles, especially at the seat of injection; impairment of motor power and of co-ordination; disappearance of cardiac impact; cessation of respiration and gradual enfeeblement and loss of reflex and voluntary movements.

In specimens of arrow poison furnished Tillie from the Rio Verde tribe of Indians in New Granada he was able to extract curare as the basis of the active poison. This, as already stated, is the favorite poison used by the tribes in the South American districts bordering on the Amazon and Orinoco.

Gärtner has recently called attention to a heart depressant used as an arrow poison by the Negritos of the Island of Luzon of the Philippine group. The poison is obtained from the bark of a tree called abuhab by the natives, the scientific name of which is *Raboloisia philippinensis*, the botanic description of which is minutely detailed by the author. He was able to obtain an extract from the bark of great potency, 0.1 gram inserted under the skin of a frog arrested the heart action in eight minutes.

The methods pursued by the North American Indians are more varied and for the most part not so deadly. Hoffman tells us that the Comanches employed the juice of the Spanish bayonet (*Yucca angustifolia*), which they obtained by piercing the skin of the plant with the arrow points. The ceremony of thus preparing the arrows is directed by the war chief after a period of fasting and self-torture by the young warriors. The Lipans are said to plunge the points of their arrows in the menstrual blood of a woman, while the Apaches prepare their poison by grinding the heads of rattlesnakes with fragments of deer liver. After decomposition has

been allowed to take place the arrow-heads are dipped in the mass and subsequently set aside to dry. The Moqui Indians of Arizona prepare a poison that is said to cause death in the course of three days, which they call Ti-ki-le-li-oui. It is prepared as follows: A rattlesnake is irritated to the point of madness, when it inflicts stings in its own body, from which blood begins to flow. At this juncture of the religious ceremony the high priest of the order of snakes dips the arrow points in the sanguineous fluid. The less deadly methods of preparing arrows by the same tribe is that of dipping them in a mixture of the bodies of bees or red ants ground in a stone mortar. The wounded from a missile thus prepared are said to suffer from pain and swelling about the pharynx and in the part hit, and subsequently with fever and delirium. Invalidism is said to persist for about one month.

II. THE COMPOSITION AND MANUFACTURE OF AMMUNITION WITH REFERENCE TO THE PRESENCE OF INFECTION.

The practice of poisoning missiles after the introduction of firearms became less frequent. The superior deadliness of these weapons over those of the sidearm class rendered the employment of accessory methods, like the use of poisons to ensure death, unnecessary.

In view of the amount of heat which is generated with the ignition of explosives, the possibility of poisoning bullets for the purpose of conveying infection has often been debated. In considering the septicity or non-septicity of projectiles, it may be stated, that until the formulation of our bacteriologic technic, as now practiced, it was impossible to accurately determine the pro or con of this interesting question. Those who in former times advocated the asepticity of projectiles did so on the evidence afforded by their uniformly good results in the clinical field; whilst those who opposed the idea did so on the evidence furnished by unfavorable results from the same quarter.

As a preliminary to some observations on the bacteriology of ammunition, it is proper to carefully investigate the method of manufacture of the different articles entering into the composition of ammunition, such as the explosives and the wadding, as well as the shells, and also the technic of loading. In this way only can we determine whether the methods employed are calculated to purify or contaminate the missiles that are concerned in the production of gunshot wounds.

Black Powder.—We are informed by prominent makers of powder in this country, notably the E. I. Dupont de Nemours & Co. of Wilmington, Del., that the purity of powder is assured by the high degree of heat to which the three ingredients of the powder are subjected before being incorporated in the form of an explosive compound. These ingredients, as is well known, are: saltpeter 15 per cent., sulphur 10 per cent. and charcoal 75 per cent. In refining saltpeter the saturated solution of the crude material is heated to a temperature of 250° F.; the sulphur is fused from the crude brimstone, in order to remove extraneous matter; and the charcoal is obtained from willow wood after being subjected to a high temperature in a retort.

Smokeless Powder.—The so-called smokeless powders are for the most part secret compounds divided into two principal classes, viz., those made up of guncotton and the others having picric acid as a base. The former of these are used almost exclusively in the military rifle. The Schultze Gunpowder Co. informs us that their

"E.C." powder has for its base guncotton of various nitrations, which, as is generally known, consists of treating cotton with a mixture of strong sulphuric and nitric acids. The guncotton so obtained is next thoroughly purified by washing with boiling water, the temperature being never less than 212° F. As to the subsequent processes only the purest of salts, such as nitrate of barium and potash, are used to be incorporated with the guncotton. The grain is next gelatinized with solvents, like alcohol, ether and acetone.

It would be trespassing beyond the limits of this lecture to detail the mode of manufacture of the many smokeless powders found in the market, but it is sufficient to state that the extra care undertaken to exclude impurities is calculated to render the powders sterile, as they issue from the factory at least.

Wads.—According to the Union Metallic Co., cardboard wads are manufactured from newspapers soaked in hot water, and when reduced to a pulp the material is run through a refining engine. It is then treated by machinery to convert it into a web of desired thickness. When taken from the machine the sheets are dried and finished with a hot roller. Wad-felt, another material used for wads, is, according to other manufacturers, made from wool, hair, soap, flour, glue and china clay. White paper is pasted on both sides of the felt. This wadding material is next subjected to hydraulic pressure, then dried and cut in strips, after which the strips are run through a cutting machine. The final step in the process consists in lubricating the edges of the wads with stearin heated at 130° F. As far as can be learned there is nothing in the process of manufacture to insure wadding material from contamination.

The Manufacture of Metallic Shells and the Process of Loading.—Ordnance Memoranda, No. 8, of the U. S. Army, describes the following method of manufacture of the center-fire metallic cartridge, which is about the same as that employed by private firms. Although there have been some improvements in the process of manufacture since the circular was issued, the employment of heat and the use of acids and alkalies remain about the same.

The cartridge consists of the following parts: (1) The case of copper or brass, (2) the cup anvil, (3) half a grain of percussion composition, (4) 70 grains of musket powder, (5) a lubricated bullet weighing 500 grains.

During the manufacture of the copper cases they are annealed once or twice by subjecting them to a red heat in a charcoal fire. They are subsequently treated once with a solution of sulphuric acid in water (1 to 15), and twice finally with a solution of caustic potash and caustic soda, one and a half pounds of each to five gallons of water, after which they are thoroughly dried in a drying room at a temperature of 125° F.

The lead of which the bullets are made is melted and skimmed of dross, after which it is cast in cylindrical molds of suitable diameter and length. The subsequent steps of compressing the lead and cutting the bullets into proper length is done entirely by machinery.

The act of loading is also accomplished by machinery, and before each bullet is pressed into its copper case its surface and cannelures are lubricated by a mixture of grease and wax which has been previously subjected to a high temperature.

The Union Metallic Cartridge Co. describe the method of loading metallic and paper shells as follows:

The shells, after being primed with fulminate of mercury, are placed in plates holding them securely and filled with powder; over these plates of charged shells another set of plates holding bullets or wads, as the case may be, is placed in perfect alignment with the shells beneath. By means of a pin-plate wads or bullets are forced in place, after which the

shells are crimped. The paper shells are placed on a rotating dial, which deposits them singly in a receiving chamber, where by an intermittent action of the machine they are loaded with powder, wads and shot.

The cartridges are finally packed and hermetically sealed into paper boxes, the frames and skeleton divisions of which are made of tarred boards. The employment of heat, acids, alkalies and absolute cleanliness are said to be necessary by the manufacturers of ammunition to insure the keeping qualities of the powder and to obtain constant results in firing, precautions which doubtless add to the sterile properties of the cartridges.

Having in this way investigated the origin and preparation of ammunition, it was next considered proper to study its bacteriology.

III. THE RESULT OF BACTERIOLOGIC INVESTIGATION AS FAR AS IT RELATES TO BULLETS, GUNPOWDERS AND WADS, BEFORE AND AFTER FIRING.

1. **Bullets.**—In a bacteriologic study of bullets from original packages we found that the cleanly methods employed in the manufacture of ammunition tend to sterilize the projectile in a majority of cases. A score of bullets were extracted from brass shells by means of sterile forceps and dropped in as many tubes of gelatin. After the lapse of a few days 53 per cent. of the tubes failed to show any growth, and those containing colonies were found free from septic germs.

In order to ascertain the effect of firing on the bacteria that might be found lodged on a contaminated bullet, a six-chambered 38 caliber Colt's revolver was sterilized for one hour in an Arnold's sterilizer before firing. At a range of 13 feet 12 cartridges that were lying on the floor of an unswept room were fired from the sterile pistol into an iron target enveloped in a wire screen, the target and the screen having been previously sterilized by the flame. As each shot was fired the target was sterilized anew. The projectiles and fragments of the same were collected as rapidly as they were fired, from the sterile screen, and dropped in agar-agar tubes at 42° C., and converted into Esmarch rolls. At the end of 48 hours, at the ordinary room temperature, all the tubes showed growth and the majority of them contained scores of colonies.

2. **Black Gunpowder.**—(a) The components of black gunpowder (sulphur, saltpeter and charcoal) obtained from the Dupont Powder Works, Wilmington, Del., were separately examined by placing a few grains of each in a half dozen bouillon tubes. Under favorable conditions of temperature growth only occurred in those containing charcoal. This was undoubtedly the result of contamination in handling, as the charcoal was obtained loose, wrapped in a piece of newspaper. Otherwise, as already intimated, charcoal is sterile from the high degree of heat to which the willow wood is subjected in the retort. The antiseptic property of the other components accounts for the negative results with them, no doubt. The saltpeter was the subject of special study, because the crude material is obtained from saltpeter beds in the earth where every opportunity might exist for the introduction of tetanus and other impurities. Still, as already noted, the refining process employs such an amount of heat, 250° F., as must preclude the persistence of the most resistant spore-forming bacteria, so that the heat and antiseptic value of the chemical product together most likely account for the absence of growth in the bouillon tubes belonging to this series.

(b) We next examined the powder charge of blank cartridges from three different makers, viz.: the Domin-

ion Cartridge Company, the Eagle Metallic Cartridge Company and the Union Metallic Cartridge Company. Every precaution was observed to prevent contamination during the operation of unloading the shells. The latter were immersed in a 1/1000 solution of mercury bichlorid for sixty minutes before the wadding, which was non-absorbent, was removed with a sterile pin. The full charge of powder was added to a tube of bouillon, and altogether 41 tubes were thus prepared from the different ammunitions. Placed in the incubator at 37° C. aerobically and anaerobically at the end of 24 hours 12 per cent. of the tubes showed growth. The contaminated tubes might have been the result of accident in the technic, but more probably some of the cartridges were normally contaminated in the process of loading. Although powders are generally found pure for the most part; yet some samples are often very trashy, as those used in the manufacture of firecrackers. Tests made with the latter show that contamination is present in 76.6 per cent.

(c) To determine the value of powder as a disinfectant, we dropped 12 grains of sterile powder in each of twelve tubes, and having found no growth at the end of 24 hours under favorable conditions of temperature, we inoculated each tube with a culture of colon bacillus. The growth of the latter was not interrupted, showing that black gunpowder *per se* does not destroy or restrain the growth of this organism.

(d) The next step in our experiments had reference to the potency of the heat generated in the chamber of a gun to sterilize the unburned grains of powder at the moment of ignition. It is of interest to know in this connection that in firing an ordinary hand rifle only 43 per cent. of the amount of powder is consumed in the generation of the gases. The remaining 57 per cent. of the charge is propelled at distances varying with the amount of the charge, the standard of the powder and the caliber and length of the barrel. The grains of powder that are imbedded in the tissues to produce what we generally designate as powder-burn are not consumed in the act of firing. This is well shown by firing into blotting paper and collecting the grains that are caught in the latter. When placed in a saucer they are easily ignited by a burning taper. It was natural at this point that we should inquire into the fate of organisms that might be accidentally or otherwise placed on the unburned grains of powder that go to make tattoo marks or "powder-burn." We purposely contaminated the powder charge of 24 Springfield carbine cartridges and fired these into 24 targets of agar-agar and gelatin plates at five feet. Each target contained four of the plates secured in place by wires. Out of eighty plates thus prepared—the others having been destroyed by the ball or the force of concussion—growth was present in every instance at the end of 48 hours. In order to determine the likelihood of contamination by the disturbance of the intervening air, twelve shots were fired with sterile powder into twelve targets of four gelatin plates each. Growth only appeared in 5 per cent. of the 48 plates when placed in the incubator, showing that the opportunity for contamination by currents of air that are forced against the target by the propulsion of the charge is very small.

3. *Smokeless Powders.*—The bacteriology of smokeless powders was next considered. The experiments about to be described were conducted with the "Peyton powder"—a compound of nitro-cellulose—now used by the U. S. Army in the military rifle. Although we have

every reason to believe that this powder is contaminated by handling in the same way that the old black powder is, we fail to obtain growth when we place a few grains of it in media like bouillon, gelatin or agar-agar, etc. This powder imparts a yellowish color to the media. After repeated trials I have failed in cultivating *B. prodigiosus* in bouillon to which a few grains of the powder had been added. It would seem from this that the Peyton powder contains a substance which inhibits the growth of certain bacteria in the media mentioned. On the other hand, if a bouillon tube containing a few grains of Peyton powder is inoculated with anthrax spores, growth will be noticed at the end of 24 hours under favorable conditions of temperature, showing that the restraining influence of the powder does not apply to the more resistant forms of germ life.

If the experiment of firing black powder into agar-agar or gelatin plates be repeated with the Peyton powder, whether this be sterilized or not, the powder grains which are caught on the media impart no growth as a rule. The yellowish discoloration already mentioned is invariably noticed around each grain. If, however, we purposely mix earth in the proportion of 10 to 20 per cent. with the powder before firing, colonies will appear in great numbers in the media beyond the area of discoloration, and sparingly, if at all, within the latter.

Out of six gelatin plates fired into at ten feet with the Peyton powder, which was previously contaminated with dust, colonies were observed in two of the plates. More recently on working with the Dupont brand of smokeless powder we have observed growth in a small percentage of the samples examined. Nimier and Vincent, in their experiments with the explosive used by the French, and Deubler, while experimenting with the smokeless powder of the Austrians, established that their smokeless powders were contaminated, although they failed to isolate pathogenic cocci.

4. *The Wads.*—The wads were examined as follows: Twelve pasteboard wads from as many .22 caliber cartridges used in the toy pistol manufactured by the Dominion Cartridge Company, were removed with an aseptic pin from their shells and dropped into separate tubes of bouillon. Growth was present in every tube, both aerobically and anaerobically in the Novy jar. These tubes were then examined for tetanus and malignant edema, by animal inoculations, with negative results.

Similar examinations were made of wads composed of felt and cardboard from other firms, with evidence of contamination in every case. The results are not surprising, in view of the source of the material entering into the composition of the wad as well as the absence of anything in the technic of manufacture which is calculated to destroy infection.

The influence of the heat of ignition was tested by firing wads into plates of gelatin and agar-agar. Sterile wads were contaminated with dust within and without, on the surface next to the powder and that facing the target, and in every instance the result proved that the wad remained contaminated.

Having shown that the act of firing failed to destroy micro-organisms that were casually placed in the ammunition, we next proceeded to experiment with distinct bacteria.

IV. THE TRANSMISSION OF DISTINCT BACTERIA BY VARIOUS MEANS IN FIRING: *B. ANTHRACIS*, *B. RUBER*, *B. COLI*, *STREPTOCOCCUS PYOGENES* AND *B. SUBTILIS*.

In 1892-5 we were able to show the effect of firing bullets and powders that had been previously contam-

inated with distinct bacteria. For this purpose we infected bullets and powders with anthrax and fired them from different weapons with the following results:

Bullets.—Before we undertake a recital of these experiments it may be well to recall the fact that we have already demonstrated that unclean bullets, such as those taken from the floor of an unswept room, the ammunition belts of soldiers, etc., when fired in sterile cotton, are not purified by the act of firing. To make this more apparent we conducted additional experiments as follows: From a sterile .38 caliber Colt's revolver, at ranges varying between five and ten feet, we fired 17 shots into baskets of sterilized jute or cotton. Each ball was previously infected with anthrax spores in a small hole drilled into the point of the missile and the hole sealed with yellow wax. After each shot the bullet was taken from the sterile cotton and the wax removed. The ball was dropped in a tube of bouillon, agar-agar or gelatin, and, in the case of the latter, it was converted into Esmarch rolls. Of the 17 tubes thus prepared, the *Bacillus anthracis* was recovered from 16, the failure being an instance where the ball was split into two parts by striking the basket. The focus of infection was very likely destroyed. We next infected the surface of the conical ends of five bullets of the same revolver with anthrax spores mixed with grease and wax 1-4. They were fired into a sterile iron target properly screened at a range of thirteen feet. The bullets made a regular impact in every instance, striking point on. They were recovered, as a rule, in a number of fragments with sterile forceps and dropped into tubes of nutrient media. Two days later every tube bore colonies of *Bacillus anthracis*. In order to better test the efficacy of the heat generated by the ignition of the powder, we infected four of the bullets with a culture of anthrax spores in the concave base next to the powder. They were fired into the same target and collected under the precautions already mentioned. Each bullet, or the pieces thereof, was dropped in bouillon. Every tube showed growth of the *Bacillus anthracis* at the end of three days. In order to determine this point with regard to the vegetative form of the organism, we infected 11 bullets in their concavity next to the powder with the blood of a mouse that had died of anthrax the night before. The projectiles were fired into the same target at the same range from the sterile revolver. They were dropped in as many tubes of bouillon with positive results in nine of the tests.

The outcome of these four sets of experiments shows that 92 per cent. of the projectiles remained infected after firing.

So far the experiments have reference to low velocity projectiles, impressed by 16 grains of black powder. The amount of heat imparted to the bullet is necessarily very small compared to that which is imparted, for instance, to a .45 caliber projectile of the Springfield rifle, or to the high velocity jacketed projectiles of reduced caliber like those of the Krag-Jorgensen, Mauser, Mannlicher or Lebel type.

The fate of anthrax spores on the Springfield rifle bullet was tested as follows: The bullets, weighing 500 grains, impressed by 70 grains of black powder, were fired into a target of pine boards, one inch thick, disposed at intervals of an inch. Three of the bullets were infected in depressions made by the pressure of a knife blade on the conical end of the lead. The firing was done at a distance of ten feet. The bullets penetrated 17, 18 and 19 boards respectively. As soon as recovered

with a pair of sterile forceps, each bullet was dropped in a tube of bouillon. The bullets were very much set up, the grooves already mentioned were entirely effaced, and the tubes were all negative after the lapse of three days, which could only be attributed to the severe friction and mechanical effect to which the projectiles were subjected in traversing the wood fiber.

Three other bullets were infected with anthrax spores, in this instance in the concavity of the base next to the powder, and fired into a target of boards at a distance of ten feet as before. The penetration was 19, 23, and 18 boards in the order of shots fired. The bullets were recovered with sterile forceps and dropped in bouillon as before. The results were positive in two of the tubes at the end of 48 hours.

Along this line of work Dr. Pustoschkin has more recently demonstrated the effects of firing sterile bullets through infected clothing before and after the barrel had become heated from a succession of shots, as well as the effect after contaminating the ball or the barrel of the gun. She experimented with the Swiss military rifle of 7.5 mm., propelling a steel-clad bullet possessed with an initial velocity of 600 meters. (1) The firing was done at 7 meters through pieces of cloth that had been saturated with cultures of 1, *Bacillus ruber*; 2, *Bacillus coli*; 3, *Streptococcus pyogenes*; 4, *Bacillus subtilis*. In every instance the results were positive; that is to say, a sterile ball from a sterile barrel became infected with each of the micro-organisms mentioned when it traversed the infected cloth as shown by cultures of gelatin subsequently pierced by the ball. The experiments prove that a bullet even though possessed with high velocity can become infected in transit; and that the heat imparted to the ball from a heated barrel in addition to what may be acquired by the ignition of the powder is not sufficient to prevent said infection. (2) In this series she infected the body of the bullet with the same organisms. The results in gelatin were again positive, showing that the heat from the friction in the barrel in addition to that derived from the explosion of the powder is not sufficient to destroy micro-organisms placed on the body of the ball. (3) She next infected the conical ends of the bullets with organisms already mentioned. The gelatin was infected with one after the other of these organisms, but it was noticed that the number of colonies was far greater when the point of the ball was infected as compared to the preceding series in which the organism was placed on the body of the bullet. This is properly attributed to partial destruction of the germs by friction, whilst others remained adherent to the inside of the barrel. (4) The last of the series of experiments by Dr. Pustoschkin had reference to the fate of the organism when placed in the barrel of the gun. Sterile balls were fired through the infected barrel with positive results.

Black Powder.—The subject of the transmission of distinct bacteria by powder was undertaken by us at Fort Logan, Colorado, in 1895. We used an old culture of anthrax from an agar slant as follows: The spores were mixed with 55 grains of powder from the shell of the .45 caliber Springfield carbine. The charge of the powder was emptied on a sterile sheet of white paper, and a platinum needle, sterilized by the flame, was passed once into the culture of anthrax spores, and then a number of times into and through the powder until the grains of the latter no longer adhered to the needle. The needle having been again sterilized, it was once more passed through the culture, thence through the

powder as before. This was repeated four or five times for each charge of powder, six in all. The powder, thus infected, and the ball, which had in the meantime been sterilized in the flame, were replaced in the shell. Two Petri dishes containing agar-agar were placed in wire frames and the latter were suspended against a wooden target, four inches apart. The marksman was directed to place the ball as nearly as possible in each target midway between the two plates. In this way a number of powder grains were collected on each of the twelve plates, in four of which the *Bacillus anthracis* developed colonies.

Smokeless Powder.—The experiments herewith were conducted with the Peyton powder, already referred to. The powder was contaminated with anthrax spores as before. Out of six gelatin plates fired into at ten feet colonies of the *Bacillus anthracis* were observed in two of the plates.

(To be continued.)

Clinical Reports.

UNCINARIASIS—REPORT OF A CASE.

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SAN FRANCISCO.

Medical literature during the past year has been prolific with reports of uncinariasis in the United States, and a consideration of these cases would seem to infer that the nematode causing this malady is indigenous to this country. The uncinaria are found in several of the lower animals, as dogs, sheep and cattle in different parts of this country, and the investigations of Stiles¹ of the cases submitted to him for examination have caused him to base a new species on them, which he has named the *Uncinaria americana*, the new-world hookworm, in contradistinction to the *Uncinaria duodenalis*, or old-world worm. The chief mark of distinction lies in the fact that the new species presents the buccal capsule with a dorsal pair of prominent semilunar plates or lips and a ventral pair of slightly developed lips of the same nature, instead of two pair of ventral teeth curved like hooks, and the pair of dorsal teeth, as seen in the old-world form.

It is not intended in this report to enter into the natural history of the hookworm. The reader is referred to the recent articles of Stiles,¹ Clayton,² Capps³ and others who have exhaustively reviewed the subject.

The following case is interesting, bringing up, as it does, the question of the geographical distribution of the *Uncinaria americana*:

NARRATION OF CASE.

David B., age 35, a native of Canada, was admitted to my service at St. Luke's Hospital, June 11, 1902.

Family History.—Father alive and well, mother died of some bowel trouble.

Previous History.—He had had diphtheria, luxation of left shoulder, white swelling of the knee. Previous to going to the Philippines he had spent his life in Canada, Alaska and the Puget Sound region. He was captured by the Filipinos and held captive for fifteen months, during which time he suffered great privation and physical hardship. After regaining his liberty he began to have diarrhea, with painful passages, and his tongue became sore and took on the raw, beefy appearance characteristic of sprue. He became progressively weaker and emaciated. His treatment during this time consisted of internal medication, enemas and light diet, later opium suppositories and morphin for the pain. His stools were irritating to the anus and of very offensive odor, numbering, occasionally, as many as thirty a day. There was no vomiting, but the slightest indiscretion in diet would cause considerable gastric distress and belching of gas. He gradually got worse and, after several months of this treatment,

went to the Philippine Civil Hospital, where his stools were examined for the first time, and *Amœbæ dysentericæ* were found. He was then treated with quinin enemas. Subsequent examination of the stools were negative, but he became worse and finally was put on the transport for San Francisco, arriving here May 23, 1902.

Examination.—Patient was thin, poorly nourished, skin sallow and of cachectic appearance. His tongue was of a raw, beefy appearance, with superficial ulcerations on the margins, and very sore. Buccal surfaces were also eroded and sore. Examination of the heart showed normal area of cardiac dullness; hemic murmur at pulmonary cartilage. Lungs negative. Examination of abdomen negative, with the exception of tenderness on deep pressure over small intestines and colon. Temperature at entrance 96.8, pulse 80. He was having several stools a day, which were light yellow, with considerable mucus. He was given the regulation doses of calomel and put to bed on an exclusive milk diet. As a result of this diet stools became lighter in appearance and less frequent. Several stools were examined for *Amœbæ coli*, with a negative result. Culture plates were made at different times, revealing only colonies of the colon family, no *Bacillus dysentericæ*; patient's blood did not give agglutination test with a culture of Shiga's bacillus. Subsequent examinations were also made for Shiga's bacillus, but without result. A blood count at this time revealed 3,360,000 red cells; hemoglobin 70 per cent.; differential leucocyte count not made.

Treatment.—July 3, after continued search of the stools, ova of uncinaria were found by the pathologist of the hospital, Dr. Mary Halton. The blood count showed at this time 2,290,000 red cells, 3,150 white cells and 55 per cent. hemoglobin. Differential count: polynuclears, 40 per cent.; large mononuclears, 17 per cent.; small mononuclears, 19.5 per cent.; eosinophiles, 23.5 per cent. The next morning he was given one gram of thymol in capsule, followed at 1 p. m. by a similar dose, later in the afternoon giving him one ounce of castor oil. This was followed by several liquid passages, which were all examined, revealing ova of the uncinaria and one worm. About this time his tongue, which had improved very much on the milk diet to which he was subjected, became decidedly worse and caused him a great deal of pain.

July 12, ova persisting in his stools, he was given four doses of thymol during the day, consisting of one gram each. Following this another hookworm was found in one of the stools.

July 21 there were 2,500,000 red cells, 5,300 leucocytes, 50 per cent. hemoglobin. Differential count: polynuclears, 33 per cent.; large mononuclears, 8 per cent.; small mononuclears, 24 per cent.; eosinophiles, 35 per cent.

July 25, as the ova were still present, larger doses of thymol were given. After a preparatory cleansing of the bowels, four doses of two grams each were given in capsule at intervals of three hours. Examination of the stools following this last administration was negative. There was considerable reaction as the result of this rather vigorous treatment, and he was temporarily put on small doses of strychnin. His condition from July 28 steadily improved. His tongue also became less sore and lost the raw, beefy ulcerated appearance.

August 1 there were 2,450,000 red cells, 5,520 leucocytes, 60 per cent. hemoglobin. Differential count: polynuclears, 43 per cent.; large mononuclears, 5 per cent.; small mononuclears, 21 per cent.; eosinophiles, 31 per cent.

August 6 hemoglobin had increased to 60 per cent. and the eosinophiles had decreased to 24.5 per cent.

August 15 there were 2,660,000 red cells, 7,800 white cells, 65 per cent. hemoglobin, eosinophiles being up to 38 per cent.

September 7 the red cells numbered 3,200,000, leucocytes 5,200, hemoglobin 65 per cent., polynuclears 48 per cent., small mononuclears 24 per cent., large mononuclears 6.4 per cent., eosinophiles 21.6 per cent.

He left the hospital on September 20, promising to return regularly for blood counts. On October 24 blood count revealed 3,300,000 red cells, 7,000 leucocytes, 70 per cent. hemoglobin. Differential count: polynuclears, 58 per cent.; large mononuclears, 5 per cent.; small mononuclears, 17 per cent.; eosino-

philes, 20 per cent. He has failed to report for examination since that date. After the third administration of thymol, though the stools were examined for several days, no further evidence of the presence of uncinaria or its ova was observed.

COMMENTS ON THE CASE.

Though the increase in the number of red cells and the amount of hemoglobin, and the decrease in the eosinophiles were very slow, and, in fact, were far from normal at the time he left the hospital, still the man's rapid improvement from the time of the third administration of thymol and his steady increase in weight, increasing as it did from 105 to 140 pounds when he left the hospital, can scarcely leave any doubt that he has entirely recovered from his malady. This man has disappeared, but careful inquiry of his relatives and friends has elicited the fact that he has, in all probability, never been in other localities than those mentioned in the report.

The uncinaria found in his stools were submitted to Dr. Stiles for classification, who determined them as belonging to the species *Uncinaria americana* (number 9412, parasite collection of the United States Public Health and Marine-Hospital Service). From the fact that the patient was well until after a sojourn of fifteen months in the Philippines, it is hardly probable that he contracted his disease in this country. The inference would seem fairly clear that the *Uncinaria americana* is indigenous to the Philippines. Dr. Capps' case contracted his disease in Panama, and was an infection with the *Uncinaria duodenalis*, or old-world species. Thus we have both species found on the American continent, and, admitting that my case originated in the Philippines, certainly both forms are found there. It is important that these cases should all be properly classified, and it is very important that they should all be diagnosed. That a very large number of cases of extreme anemia with intestinal symptoms are due to this nematode is unquestionably true, and too much stress can not be laid on the necessity of examining the stools in all such cases. Such examinations, carefully made, will not fail to find the ova, if this disease be present.

The symptoms of sprue in this case make it more interesting. There is a dearth of literature on this subject. Manson describes the condition in his "Manual of Tropical Medicine," and it was the topic of discussion in the Section on Tropical Diseases at the annual meeting of the British Medical Association in 1899, where Thin considered the disease as of a specific nature.

Has sprue or psilosis a distinct entity as a disease, or does it exist merely as a group of symptoms in intestinal affections? This question has recently been raised by Musgrave,¹ who autopsied sixteen cases, in thirteen of which it existed as a symptom group in other diseases, and in two of which the uncinaria were found in the intestines, postmortem. His investigations, however, lead him to conclude that "it is more rational to consider sprue as a state or symptom-group occurring in the tropics in chronic diseases, especially those affecting the gastrointestinal canal." Manson² also considers it, not as one disease, but a variety of diseases with a series of symptoms in common. That my patient's sprue symptoms disappeared with the disappearance of the uncinaria is unquestionable, whether the disappearance is permanent, however, can not at present be known. An exclusive milk diet will often clear up these symptoms, only to return when mixed diet is resumed. Further researches will be necessary in order to establish the status of this interesting symptom-group.

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Blindness in France.—In a report to the Ophthalmological Society, Dr. Troussseau states that the number of blind in France reaches 31,960; a proportion of 8 in 10,000. This proposition is considerably in excess of that in Denmark, Switzerland, Austria and, above all, Holland, where it is exactly 4.46 in 10,000.—"Medical News."

A CASE OF MYCOSIS TONSILLARIS AFFECTING BOTH TONSILS.

COMPLETELY CURED BY REMOVAL OF THE TONSILS BY ELECTRO-CAUTERY DISSECTION.

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Miss A. B., aged 23, concert pianist, came to me, Sept. 26, 1902, with a history of having suffered more or less with her throat for the last ten years, the first attack of "sore throat" having begun in Boston while en tour; recurrences having been frequent since. February, 1902, she noticed a whitish formation on both tonsils. This could not be removed by the ordinary means resorted to, such as gargles, sprays, etc. She consulted several specialists in different portions of the country, but none vouchsafed an opinion as to the nature of the disease, nor advised anything in the way of radical treatment.

Examination revealed in the sulcus forward of the posterior pillar of the right tonsil a fan-shaped, whitish growth, apparently fungoid in character. This growth extended from about midway of the tonsil up to the supratonsillar fossa. The tonsil was not hypertrophied to any considerable degree. The left tonsil presented practically the same condition, the growth occupying an identical relation to the organ, but was not so extensive, being perhaps only half the size of the other.

A portion of the growth was removed from the right tonsil for microscopic examination, my opinion being that it was a case of mycosis. The patient was also told that the best treatment would be to remove the tonsil by electro-cautery dissection, thus eradicating completely the source of origin of the growth. Since she was desirous of immediate relief, and had but a short while to remain in town, she consented to immediate operation. After cocaineizing the right tonsil thoroughly with a 10 per cent. solution of cocaine, followed by an application of adrenalin chlorid, 1/2000, the right tonsil was dissected away with a cautery point in one sitting. I barely had time to complete the operation before the patient, who was of a highly nervous temperament, had a hysterical attack of exceeding severity, accompanied by weeping, numbness of the extremities and tonic spasms of the fingers of both hands. Three weeks later she returned for removal of the other tonsil, and this was done with great rapidity in order to avoid, if possible, another hysterical attack. This was barely escaped, as hysterical symptoms began to manifest themselves toward completion of the operation.

A careful microscopic examination made in the interval between the operations showed an abundance of filaments of *Leptothrix buccalis* and mycelial threads, in various teased specimens that were prepared from the portion of the growth removed from the right tonsil.

This patient was seen twice after the last operation, the most recent examination of her throat having been made early in the present year (1903), and there was no indication whatsoever of a return of the growth of either tonsil.

Mycosis of the tonsils is not a specially uncommon disease, but it is infrequent enough to justify the reporting of such cases as are encountered in which there is no question of the diagnosis. This case, moreover, is unique in at least two respects. First, in that the growth did not consist of discrete rods or tufts, which usually is the case, but of conglomerate patches of fungus. Second, its complete cure by electro-cautery dissection, which must be accounted for by the thoroughness of removal of the organs from which the growth sprang, since it is the experience of every writer on this subject and of all observers of cases that the treatment of mycosis tonsillarum is very unsatisfactory, Grayson stating in his recent textbook on the diseases of the nose, throat and ear, that "Even with the greatest care, the cure of a well-developed case in less than six weeks or two months will be a credit to the practitioner."

Lyceum Building.

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THE DANGERS IN COMPETITIVE COLLEGE ATHLETICS.

Recent statements by prominent educators opposing modern tendencies in college athletics have been accompanied, it happens, by numerous publications with a similar tendency based on considerations of the purely physical dangers. As baseball has been displaced from its pinnacle of student adoration by the more violent football, and as the annual growth in the fierceness of competition is leading to more and more protracted training of the athletes in all competitive lines, whatever serious results may follow are likely to be greatly increased. From the standpoint of the educator the great question lies in the moral effect on the student body as a whole, and on the individuals participating, of the intensity of emotion and of interest that the great intercollegiate contests engender. For a large part of the year the interest of the athlete is centered on athletics at the expense of the many other things that go to make up the college career and training; for a number of weeks the same condition affects the entire mass of students. That both good and bad results may come is evident, and the effort of those in authority will probably be directed to so altering conditions that the good may increase as the bad diminishes, rather than to entirely cut out all intercollegiate contests, as some have urged. Intercollegiate athletic contests have too strong a hold on the public to be exterminated by faculty authority. But in addition to the pedagogic features of the question there are matters of pathologic interest and physiologic development that concern both the student of physical culture and the medical adviser. To the former the burning question is the tendency to center all effort on the team, or nine, or crew, that is to represent the institution in competition, and to which all eyes are turned through profusely illustrated newspaper reports as well as by appearances in public. The result is that a minute fraction of the university population, generally the part that already has through natural endowment or previous training the best physical development, is singled out for all the care, advice and training, while the average student who needs the attention far more is left more or less to his own devices. What should be the great aim of the school, to bring all to a proper degree of general development, is sacrificed to carry a very few to the utmost limits of power in some special line.

The results of excessive development of the few are of more immediate interest to the physician. During the

process of training a few conditions are prominent: one is the hypertrophy of the heart, often with periods of dilatation; another is a greatly increased metabolism, attested to by the great fluctuation of weight which often amounts to several pounds during a single contest, and the enormous meals consumed at the training table. A study of the competitors in the annual "Marathon runs," held at Boston during the last few years, has just been reported. It is of much interest.¹ The men were examined just before and just after a run of twenty-four miles. While in some the pulse rate was not much increased, it usually was high, even 180 being recorded. In practically all cases the hearts, already hypertrophied from training, became more or less dilated, often with systolic murmurs. The temperature was invariably raised, and a leucocytosis corresponding in intensity and type with that observed in inflammatory diseases, generally over 20,000, was constant. The urinary examination indicated an active renal hyperemia, albumin, casts and blood being found at first, but these abnormal substances all disappeared in a week. An interesting finding was the decrease of urea for the first twenty-four hours following the race.

All of these changes indicate that in violent athletic exercise there is produced a great mechanical strain on the heart, and the presence in excessive amounts of the "toxins of fatigue" that cause much the same results as acute infection, namely, leucocytosis, fever, and renal injury. That repeated exercise, such as prolonged training in successive years, may lead to permanent injury of the heart or kidney is unquestionable—how frequently such is the case is altogether a different question, needing statistics of athletes after their period of active training, which statistics are obviously difficult of accumulation. The pathogenesis of interstitial myocarditis is too obscure to permit of dogmatic statements, but we know that when a tissue suffers atrophy of its parenchyma cells the interstitial tissue usually takes their place, and this fibrous tissue in contracting lessens the blood supply so that further atrophy follows, and thus a vicious circle is established. When an athlete subsides into a quiet life his hypertrophied heart muscle may readily undergo such change, and there is abundant evidence that it does. Constant hammering of a hypertrophied heart on the arteries can not well help shortening the existence of the "vital rubber" in their coats. G. Frank Lydston,² writing under the title of "Briefs on Physical Training," calls attention forcefully to the grave results that have been observed to follow in later years the athletic excesses of youth, not only in damaged cardio-vascular systems, but also in disturbed metabolism as manifested in "lithemia," whatever that may be. "The man who gets a great deal out of himself physically before the age of 30 is bound to 'go back' after

1. Observations on Long Distance Runners, edited by J. B. Blake and R. C. Lairabee, Boston Med. and Surg. Jour., 1903, cxlviii, 195.

2. American Medicine, Feb. 21, 1903, et seq.

that period. The man who attains supremacy on borrowed energy—energy borrowed from his physiologic bank—is called on to pay his note sooner or later. He can not do so and goes into physiologic bankruptcy.”

If in our fondness for the excitement of athletic contests we are leading to injury of the vital powers of young men, if we are encouraging a system that decreases their prospects of longevity, we may seriously stop to consider if the game is worth the candle. If we must have the excitement we can turn to other fields—the shortening of the life of a race horse, or of a game cock, or even of a professional pugilist, need not concern us much, but perish the thought that modern civilization countenances any form of public amusement that may impair the futures of our best of young men, the college graduates!

MEDICAL SCHOOLS OF LOW STANDARDS.

The rapid development toward higher things in medical education during recent years is most gratifying. The future historian of medicine in this country no doubt will be struck with the general elevation of requirements for admission to medical study as well as the improvement and arrangement according to approved pedagogic principles of the medical curriculum that he will note have been and are taking place in so many medical schools of our time. It is probable, too, that he will trace much of this development to the influence of a few schools that had the wisdom to set their standards at what at one time may have seemed unattainable and impractical heights, but with the very practical outcome that there were disclosed a much greater number of young men anxious for that sort of a medical education than even the most sanguine enthusiast had anticipated. This gave medical educators the highest standards for actual comparison and not merely mediocre ones, and a general movement away from low standards started. This movement is still in its inception.

Much discussion of the many and difficult problems involved in a comprehensive elevation of the standards of medical education is still before us. The burning question for some time will be how best to deal with the manifestly inferior schools, the schools with low entrance requirements, low standards of teaching and low standards for graduation. The normal death rate among these institutions is still very small, but with a decreasing birth rate and, let us hope, a surely but slowly increasing death rate, their period of greatest harmfulness has probably reached its climax to enter on a gradual decline. There are, however, various methods by means of which the harmful influence of these schools can be curtailed still further.

In the first place it seems to us that the various state boards can do more than has been done to raise the standards of medical education of the applicants admitted to state examinations by specifying more exactly the minimum standards of entrance requirements to be adopted and followed by so-called recognized schools.

Surely the very least that must be demanded by way of entrance requirements is a good high-school education or its equivalent, and after adopting some such standard, whatever it be, the higher the better, the state boards should demand that applicants for state examination furnish unquestionable proof of their having fulfilled this requirement before entering on the medical courses. In connection with this it must be said that high schools and other schools differ most widely in the quality of the work they do; hence the state boards should adopt regulations specifying exactly the amount and may be the kind of work that must have been done in order to satisfy their demands as to the applicant's fitness to begin the study of medicine. In the next place, the state boards could do a great amount of good by changing the character of the examination they now give applicants for license to practice. The examination now is written. The questions asked are such that the answers form no real test of the fitness to practice of those examined. A vigorous spell of cramming quiz-compends enables any medical student of ordinary mental ability to pass the examinations as now given in many states. As has been pointed out before in these columns, the examinations for license to practice should be practical; they should include practical work at the bedside, in the dissecting room and in the laboratory. The superiority of this kind of examination over the ordinary written examination in testing the real qualifications of applicants is so self-evident that no further discussion is necessary at this time.

Something would be accomplished, too, if the American Medical Association were to demand a certain definite minimum of premedical education as a qualification for membership after a certain period of reasonable length. This requirement would have manifold increased force if it were adopted also by the affiliated state societies and the respective local societies.

If decided steps were taken in the directions indicated the general effect would be, first, greater discretion on the part of medical students in the selection of the schools at which to take their medical courses; second, a determined effort on the part of the low-standard schools to rise from their present low estate, and in this invigorated process of differentiation the law of the survival of the fittest would be felt in full strength.

The discussions concerning the needed elevation of the standards of medical education in this country have dealt so far almost exclusively with the purely educational and technical features of the medical schools in preparing future physicians for their life work. It is to be hoped that some thought may be given also to the moral welfare of medical students. Will the moral atmosphere and influence of the low-standard school, especially in the large cities, be better or worse than that of the school with high educational standards? This is a question that medical men in general are competent to answer. Let each answer it to himself according to his light and use his influence accordingly.

TRUTH AND FALSEHOOD IN MEDICINE.

In a very interesting paper Dr. Richard C. Cabot¹ discusses the use of truth and falsehood in medicine. He calls it "an experimental study" and gives his own experience. It is generally held by physicians, we presume, that truth can not always be told, and many even hold that actual fiction is often justifiable.

There has developed a sort of popular medical casuistry which makes us sometimes step down from the high moral plane of absolute truth-telling as an almost necessary course of conduct. Dr. Cabot admits that he has told many lies that he has thought necessary, but he also shows from his own personal experience how practically useless this has been to him, and he has learned how much easier it is to tell the truth. The temptations to do otherwise are often great, and it would seem absolutely a risk in some instances to follow the straight path. Nevertheless he has found the innocuousness of truth, when reason and experience would lead one to believe it must do harm, more surprising to him than the remarkable tolerance of the febrile patient for alcohol. Of course, the truth does not necessarily always mean the blunt and naked truth; but simply the conveyance of a true impression and the avoidance of anything that is liable to produce a false one. It is not necessary to go at length into the details. The patients understand that themselves. They do not expect it. What we should do is make the patient understand in a general way the actual condition and at the same time to put before him the better possibilities. The confidence of the patient is a very important thing in medicine, and certainly that is not gained or retained if he finds the physician is withholding facts or trying to mislead.

A lie, understanding by this a misrepresentation intended to deceive, is an ugly thing to let loose, and one never knows what will be the consequence, especially the remoter ones. It is astonishing how negligent of this truth many people are and how much evil is being daily done by this negligence. One of the most striking instances of this, perhaps, which is not referred to by Dr. Cabot, is in the management of the insane. A large part of the difficulties and work of the physicians and asylum officers is in judiciously correcting false impressions which have been made on the patients before their admission. In many cases the after-effects can not be altogether removed.

There may be cases, Cabot admits, where patients do not react from the shock of the cruel truth, and he asks whether we are to persist in telling the truth, even when we believe it may kill the patient. His answer to this question seems perhaps a little harsh. He says, if it lay in our power to let loose in the atmosphere a poisonous gas that would vitiate the air so that the whole community would suffer in physical and moral fiber, would it not be worth a human life to save the whole community from such a deterioration. A lie seems to him

to be something like that. We doubt whether many physicians will be in a position, even when they review all the facts of the case and look at it from a judicial standpoint, where it will seem necessary to them to often try to save a life by a lie or it will seem possible to them to prove that the truth can kill a patient. There are many ways of avoiding harsh truths and of so telling them that it will render them comparatively harmless. We have never yet been in a position where it seemed absolutely necessary and morally right, however convenient it might be, to tell a downright lie.

Dr. Cabot also extends his idea to deceptions in treatment, and urges the omission of placebos. No patient, he says, whose language we can speak or whose mind one can reach needs a placebo. He gives them now and then to patients with whom he can not communicate, but refuses to give them when an interpreter is to be had. He sums up the results of his experiments with truth and falsehood that he has not found the case where a lie did not do more harm than good. His belief is that anyone repeating the experiments will have the same experience. Truth-telling is not always so easy as lying, but its results are infinitely better. The article is one that could be well reprinted and circulated as a part of the ethical instruction of the candidates for medical practice.

MENTAL CONDITION OF THE HABITUAL CRIMINAL.

While there are, unfortunately, some regrettable abuses in the good that the medical profession has accomplished by pointing out that crimes against life are often committed by those who are not responsible for their actions, there is no doubt that one of the greatest humanitarian advances of our time has been secured in this matter. Medical men must not be content with this, however, but must extend still further their influence over public opinion and legislative action so as to secure greater amelioration in a proper spirit of the present attitude toward the criminal and his punishment. Crimes against property are undoubtedly often committed by those who have no proper moral responsibility for their acts and who, though they may have to be taken care of by the state in order to prevent further depredations on the property of others, are yet in no condition of mind to deserve, or be benefited by, punishment properly so-called. For all punishment should imply at least the hope of reform, and many of those who commit crimes against property are incapable of moral improvement. This fact is recognized frankly with regard to certain classes of these unfortunate persons who are known as kleptomaniacs. But there are others for whom an improvement in the present legal method of treatment is specially eminently desirable and can probably only come through the wisely directed influence of the medical profession.

The histories of burglars and thieves are very common in the columns of our daily newspapers. It is unusual

1. American Medicine, February 28.

to find an arrest made for a first offense. There is usually the story of previous crimes or robbery and of repeated convictions. Four or five previous convictions are not unusual, with several escapes from sentence because of legal quibbles, or because the injured party refuses to prosecute. In two recent cases of burglary that have been prominent in the newspapers each of the accused has been previously convicted in three of the large cities of the country. There is no doubt in the minds of those familiar with the psychology of criminals and their ways that when these prisoners have served the next sentence to be inflicted on them they will return to their old method of life. The fact of the matter is that they are not so constituted mentally as to be deterred by the disgrace of conviction for felony or be reformed by the supposed punishment of imprisonment.

A little over a year ago Sir Robert Anderson, K.G., who was for many years chairman of a parliamentary committee for the supervision of criminal affairs in England, deprecated this state of things in a striking article in one of the prominent London magazines.¹ He said:

The widely circulated advertisement of one of the burglary insurance companies contains the startling statement that there are 70,000 thieves known to the police. I am speaking seriously and deliberately and I appeal to all who have any confidence in my judgment and knowledge of the subject to accept my assurance that if not 70,000 but SEVENTY known criminals were put out of the way the whole organization of crime against property in England would be dislocated and we should, not ten years hence, but immediately, enjoy an amount of immunity from crimes of this kind that it might seem Utopian to expect.

Almost needless to say, the same condition of criminal affairs holds in this country as in England. The measures of reform that Sir Robert suggests have as great an interest for us as for the people of Great Britain. His conclusion is:

No one need be either a Solon or a Fouché to understand that if the fear of consequences will avail to deter from crime, the consequences should be made adequate to that end. And if there are those whom no fear of punishment will restrain, they should be treated as lunatics and caged in a suitable asylum.

The present trend of improvement in the treatment of criminals whose crimes are against property is towards the recognition of their previous record as the only possible method of determining an adequate sentence. After such a criminal has shown the virtual improbability of reform and the non-deterrent effect of punishment by a second offense of the same kind, he should never be allowed to be out of the close surveillance of the authorities until he has proved his capacity for moral reformation. A few years ago it would have seemed absurd to promise that the great commercial ports of the world could be made absolutely free from danger of invasion by such epidemic scourges as cholera and plague that had been so dreaded in the past. That promise has been fulfilled, however, by a careful investigation

of the elements of danger and a rigid enforcement of the quarantine regulations necessary to secure cities against incoming infection. It looked originally as though all commerce would have to be excluded for a considerable time if security were to be assured during the prevalence of an epidemic. Now we know that a short detention of comparatively very few vessels gives absolute safety. So, too, it would seem that the frank recognition of the pathologic side of crimes against property would give a new aspect to the punishment of such criminals and the sequestration or persistent surveillance of a comparatively few criminal natures would give us almost complete relief from the worst of present conditions.

CENTENARIANS IN THE UNITED STATES.

According to newspaper statements, the U. S. Census for 1900 finds 3,536 persons in the United States who are 100 or more years of age. The value of these figures may be questioned, and perhaps may be best estimated by the fact that 72.8 per cent. of the whole number are negroes, many of whom undoubtedly have but very remote ideas of their own age. There are persons of comparative intelligence who can take care of themselves in the ordinary pursuits of life in the society where they find themselves and yet have but the vaguest notions of their early years and of the date of their birth. We remember meeting one such person, not exactly a civilized individual, but an aborigine and one of sufficient intelligence and influence to be a sort of chief among his fellows, who, according to his own figuring, was 268 years of age, but actually was probably about 70. Probably many of the colored centenarians whose names have been collected by the census agents would reveal a similar state of things by careful examination. It seems improbable, too, that this country should have over 3,500 when Germany with a population of nearly 55,000,000 has only 778, and England with 32,000,000 only 146; and France with 40,000,000 has only 213. Among the foreign born the largest number of the alleged centenarians are Irish. Some aged Irish women (for most of these are females) have often a wonderful imagination, and sometimes their ideas are not entirely in accordance with facts. They may honestly believe that they are 100 years of age, but this does not prove it to be true. Of course, there are many centenarians, but each case should be thoroughly scrutinized and accepted only with strong corroborative evidence. While we have no doubt that the United States will show as many centenarians, and probably more, than most other countries, the census figures seem to us rather unreliable.

"DIED AS THE RESULT OF AN OPERATION."

How many people annually lose their lives because the popular dread of the surgeon's knife has prevented them from submitting to necessary operative treatment? Obviously it is impossible to answer this question with any certainty, for the number of patients who refuse operation after being informed of its necessity probably constitutes but a small fraction of the total, the larger part consisting of those who keep away entirely from the

1. Nineteenth Century and After, December, 1901, p. 960.

physician, or who fly to the quack with whom "curing without the use of the knife" has always been the most alluring of baits. We have indeed heard of a widely advertised "eye specialist" who accomplishes feats in the way of straightening crossed eyes "without the knife" by simply using scissors, to which the knife-dreading patient readily submits. And how many patients will suffer terrific tortures from indiscriminating and ineffective caustics rather than undergo a painless operation under anesthetic for malignant growths? One of the many factors responsible for this mistaken fear has always seemed to us to be the frequent, almost constant form adopted by the lay press in reporting deaths following operative intervention of whatever kind, in the words: "Mr — died yesterday as the result of an operation for," etc. In a great part of the cases the correct wording would have been: "Mr. — died in spite of an operation," etc. For example, deaths following operation for appendicitis almost invariably are reported in the manner above described, although the operation for appendicitis *per se* would have but a most minute mortality. In many instances the error becomes extreme, as in the report of a death "from an operation for blood poisoning," when the operation in question consisted merely in draining the primary suppurating focus in the hand or foot. "Continual dropping will wear away," etc., and the natural outcome of the reiteration of this stereotyped expression is a popular misunderstanding of operative results that leads to a fear that is often fatal. Yet what can we say of the lay press in the face of the fact that the same unthinking phrase far from rarely makes its way into medical journals? If the operation did cause death, well and good—we wish nothing but the bare truth—but when death has been in spite of operation, and in many instances because this very fear has led to its postponement, then let us again have the fact stated truthfully and accurately.

THE "BATTLE OF THE CLUBS" IN GERMANY.

The Deutsche Aertztetag, which, we believe, is made up of delegates from the German medical unions (Aerztevereins), recently held a special (ausserordentliche) session at Berlin. It appears from the more or less complete reports published in the German weeklies, to have been of unusual interest. The subjects discussed were those relating exclusively to the material and social interests of the profession and largely matters concerning the German workmen's relief and insurance associations (Krankenkassen) and actual and proposed legislation in regard to them and their relations to the profession. Evidently our German confrères have many reasonable grounds for complaint; the same tendency of the benefit societies to exploit the medical profession that is the cause of so much trouble in Great Britain is only too apparent in the German empire. Thousands of the Krankenkassen, according to one speaker, pay as little as 8, 6 or even 4 pfennigs for a physician's call. Over half of the Krankenkassen practice may be considered as charity work on the part of the physician, and most of these institutions have as their obvious object only the reduction of the physicians' fees. Instead, moreover, of being the resource of the

really poor, to whom a reduction of the medical charges would be justifiable, these societies are utilized also by the well-to-do, thus defrauding the profession of its legitimate earnings. The Gera case, which has been mentioned in this journal two or three times, was, of course, discussed, as well as other attempts to degrade the profession by the association in these societies with quacks. Misleading statistics and misrepresentations in the press have helped to prevent the due attention of the legislators to the recommendations of the profession, and it was recognized that only through the organized effort of a united profession could the needed reforms be secured. The speakers saw encouraging signs in certain recent events, among them the Gera incident, the harmonizing of factions in the profession at Munich and its increased influence as brought out by thorough union and organization elsewhere. The discussion shows that the same problems exist in Germany as in Great Britain, and we can profit by watching how our brethren meet them in those lands. We have troubles of our own that we must meet in our own way, but there are others we share with the rest of the world, and it is only by organization and united effort that we can prevent the disastrous exploitation of the profession here that is already so strongly in evidence elsewhere. As we have said before, club practice is not yet a serious problem in this country except in a few localities, but it is a very threatening one.

Medical News.

CALIFORNIA.

Smallpox.—Smallpox is said to be raging among the Digger Indians of Long Valley and threatens to exterminate the tribe. —A case of smallpox has been discovered at the Napa State Hospital.

Retired After Long Service.—Dr Charles A. Ruggles, Stockton, who has served for fifteen years as a member of the State Board of Health, and for four years as its president, was retired from the board recently by order of the governor.

German Hospital for Los Angeles.—The "Deutscher Hospital Verein" has recently been organized in Los Angeles, with Dr. Joseph Kurtz, president. The object of the organization is to build a new hospital in the city, using as nucleus \$20,000 bequeathed for this purpose by Mrs. Werner, who died last year in Germany.

Split in Hospital Staff.—Four of the original incorporators of the Clara Barton Hospital, which was founded two years ago in San Francisco, owing, it is said, to disagreements regarding the management of the institution, have resigned. The new president is Dr. Emmet L. Wemple and the new secretary, Dr. J. Henry Barbat.

New State Board.—The new State Board of Health appointed by Governor Pardee met at Sacramento, April 1, and organized by electing Dr. Matthew Gardner, San Francisco, president, and Dr. Newel K. Foster, Oakland, secretary. The other members of the board are Drs. Oscar Stansbury, Chico; W. Lemoyne Wills, Los Angeles; Wallace A. Briggs and Aden C. Hart, Sacramento, and Martin Regensburger, San Francisco.

Under the Law.—G. W. Richmond, Los Angeles, a member of the "Anti-Drug Association," a magnetic healer and vice-president of the Spiritual Society of Truth Seekers, convicted of practicing medicine without a license, refused to pay the fine of \$100, and languishes in jail. —The case against John Miller, alias "Dr. Miller the divine healer," of Bakersfield, charged with illegal practice of medicine, has been dismissed on condition of his leaving Bakersfield for ever. —Dr. J. Carl Bainbridge, Santa Barbara, charged with failure to report a case of contagious disease was found not guilty. —Dr. Samuel R. Chamlee, a "cancer specialist" of San Francisco, has been held to the Superior Court in bonds of \$10,000 on the charge of manslaughter. It is alleged that while he was operating for cancer

he severed an artery and allowed the patient to bleed to death.—Dr. Sarah J. Tedford, San Jose, classified by "Polk" as a lung specialist, was acquitted on March 18 of the charge of practicing medicine without a state certificate.

ILLINOIS.

Epidemic at Greenfield.—It is reported that smallpox is epidemic in Greenfield, where 50 cases are said to exist.

Fee-Bill for Waukegan.—The physicians of Waukegan have formed a defensive union, with Dr. William C. Bouton, president, and Dr. Edward F. Gavin, secretary, and have adopted a fee-bill.

New Hospital at Rockford.—The new St. Anthony Hospital, erected by the Sisters of St. Francis, at Rockford, at a cost of \$50,000, was formally dedicated by Archbishop Quigley of Chicago, March 29.

Scarlet Fever, Not "Philippine Itch."—As certain citizens of Lake Forest have declared that the epidemic from which the town is suffering is a disease brought from the Philippines and transmitted from the troops at Fort Sheridan to the town, Dr. George W. Webster, president of the State Board of Health, and Walter S. Christopher of Chicago visited Lake Forest, examined a number of patients and pronounced the disease scarlet fever. The quarantine period has been extended until to-day. It is reported that there are 150 cases of the disease in Lake Forest and the neighboring towns.

Chicago.

Personal.—Dr. Theodore J. Blunhardt has been appointed United States Consul at Barmen, Germany.

Again Exonerated.—Dr. T. Jordan Balhatchett, who was acquitted of embezzlement, and was thereafter charged with larceny as bailee, was exonerated a second time April 2.

Mortality of the Week.—During the week ended April 4, 549 deaths occurred, equivalent to an annual death rate per 1,000 of 15.18, a substantial reduction from the high death rate of the previous week. Pneumonia again leads with 105 deaths; then follow consumption with 68; heart disease with 50; nervous diseases with 39; Bright's disease with 33 and violence with 31.

Influenza and Complications.—Regarding the influence of this disease on the mortality rate, the health department makes the following statement:

Influenza has been more prevalent during the first four months of 1903 than at any time since 1891, and of the 350 deaths last month in excess of the number for March, 1902, 330 are shown by the physicians' certificates to be due—not to influenza direct, but to influenza as a fatally complicating cause of death from pneumonia, consumption, Bright's disease, heart diseases, bronchitis, measles and whooping cough, in about this order of frequency.

Deaths in March.—With one exception—that of March, 1895—last month's death rate was the highest since March, 1893, and the excess is accounted for by the mortality from influenza. The average March death rate for the previous ten years was 15.93 per 1,000 of population; for this March it was 16.94, or 6.3 per cent. higher than the ten-year average. In 1893 it was 19.18, in 1895 it was 17.88, and in 1899 it was 16.75. The total deaths from all causes was 2,703; 728 of these were under 5 years, and 573 over 60. Pneumonia heads the list with 582 deaths; consumption was the cause in 280 cases; heart disease in 207; violence in 153; Bright's disease in 142; nervous diseases in 132, and bronchitis in 127.

MARYLAND.

Baltimore.

The Deaths.—The deaths for last week were 187, 17.66 per 1,000; 20 were from pneumonia, 19 from consumption, and 5 from grip. One case of smallpox was reported.

Trachoma Excludes.—The special board of inquiry of the United States Immigration Bureau decided on the exclusion of 12 immigrants, with trachoma, who were landed here. They will be returned at the expense of the steamship company.

Toward Tuberculosis Sanatorium.—The Quarter Club has collected \$3,000 toward the tuberculosis sanatorium and about \$4,000 of the \$25,000 necessary to secure a gift of \$25,000 by some unknown benefactor has been raised. It has been determined to open a sanatorium in the Blue Ridge this summer, a cottage and a number of tents being used for the accommodation of patients.

MASSACHUSETTS.

Conditional Constitutionality.—The Supreme Court of Massachusetts has decided that their compulsory vaccination law is constitutional, but that a man who thinks vaccination is un-

necessary can not be treated by force. He would, however, be liable to a fine of \$5.00 for each such refusal.

Typhoid at Lawrence.—Lawrence, Mass., is in the midst of an epidemic of typhoid fever, apparently due to the practice of operators of the Pacific Mills of drinking unfiltered river water. This they do because the water running in the canal is cold, while that furnished for them to drink is unpleasantly warm.

Staff Changes.—The following changes have taken place in the staff of Noble Hospital, Westfield: Drs. George W. Brace and Fred. P. Lowenstein were appointed to the medical staff; Dr. James S. McLaughlin succeeded Dr. Edwin D. Hutchinson, resigned, on the surgical staff, and Dr. Hutchinson was appointed consulting surgeon.

Dread State Institution.—The manufacturers of diphtheria antitoxin and vaccine virus have offered to furnish to the State Board of Health the products at a price lower than the cost of production to the state, and of a standard quality verified by governmental inspection, provided the legislature will refrain from appropriating money for a new state institution for their production.

Disease and Death in Boston.—For the week ended April 4 there were 214 deaths in Boston, an annual death rate per 1,000 of 19.04. There were reported 44 cases of diphtheria, with 3 deaths; 30 cases of scarlet fever; 20 of measles, with 1 death; 10 of typhoid fever, with 2 deaths; 18 cases of tuberculosis, and 24 deaths from this cause; 2 cases of smallpox, with 1 death. Pneumonia caused 29 deaths, whooping cough 8, heart disease 20 and bronchitis 5.

Street-Car Regulations.—Regulations forbidding spitting in street cars are common about Boston. Cambridge has taken another step: "Every street railway passenger car (closed) operated in Cambridge shall, while so operated, be properly ventilated; such cars shall be thoroughly aired at the end of each round trip; every such car shall be thoroughly cleansed at the end of each day's service and shall be disinfected once each week." A violation of these city ordinances involves a fine not to exceed \$100.

NEW YORK.

The Situation at Ithaca.—The death-roll at Ithaca from typhoid fever now numbers 65. Only 3 new cases have been reported since the issue of last week.

Coroner's Bill.—At last, after a sensational political fight, the bill of Senator Elsberg, abolishing the office of coroner in New York City has been passed, and in its place is to come a system of medical examiners connected with the health department.

Prisoners Tuberculous.—Dr. Julius B. Ransom, physician of the Clinton State Prison, Dannemora, is reported to have said that one-fourth of the prisoners in that institution are afflicted with tuberculosis. There are 250 prisoners thus affected, with hospital accommodation for only 54.

February Deaths.—The state health commissioner reports 10,820 deaths during February, which compares unfavorably with the average of 10,492, which has prevailed for the corresponding month in the previous five years. Influenza caused 1,500 deaths, pneumonia 1,223 and Bright's disease 802.

New York City.

Surgeon in Accident.—Dr. Francis W. Murray, one of the surgeons of the New York Hospital, narrowly escaped severe injury from the wrecking of his carriage by collision with an electric car. As it was, he received several minor injuries, and his coachman is not expected to live.

Ophthalmia Among Teachers.—It is said that two school teachers have developed a virulent and specific form of ophthalmia, supposedly from the handling of public school books. Details are lacking, but it seems strange that should be the case unless the same disease were very prevalent among the schools where the books are constantly handled by the teachers.

TENNESSEE.

Medical Staff Election.—The medical staff of Knoxville City Hospital met, March 23, and elected Dr. Benjamin D. Bosworth, president; Dr. Claudius M. Capps, vice-president, and Dr. Charles H. Davis, secretary.

State Board Examinations.—The first general examinations of applicants for license to practice medicine, since the law came in force, were held at Memphis, Nashville and Knoxville, March 30 and 31. About one hundred applicants were examined, fifty-nine of whom were examined in Nashville and thirty-two in Knoxville.

Medical Students Die.—Charles S. Lewis, one of the senior class at Chattanooga Medical College, recently died, and the combined classes of the college passed resolutions expressive of their sorrow and eulogizing their deceased colleague.—Mr. Clements, a student in the medical department of the University of Tennessee, Nashville, died, March 10, aged 36.

Personal.—Dr. G. Chris Savage, Nashville, was operated on for appendicitis a few days ago and is making a good recovery.—Dr. Fleetwood Gruver, Nashville, has been appointed assistant surgeon in the U. S. P.-H. and M. S. Service and assigned to duty at Port Limon, Costa Rica.—Dr. John R. Parker, Sideview, has been appointed assistant surgeon in the Navy with the rank of ensign.

Half a Century in the Society.—The Nashville Academy of Medicine and the Davidson County Medical Society gave a banquet April 7 in honor of Dr. Thomas L. Madden, Nashville, celebrating the completion of fifty continuous years of membership in the Tennessee State Medical Society. The committee in charge of the banquet consisted of Drs. W. Frank Glenn, D. Bigelow Blake and Deering J. Roberts.

New Physicians.—The fifty-second annual commencement of the medical department of the University of Nashville was held March 31. Chancellor James D. Porter conferred the diplomas on a class of forty-nine and Hon. A. B. Anderson delivered the faculty address.—The University of Tennessee held its closing exercises April 3. A class of thirty-six was graduated. Dr. D. Bigelow Blake delivered the charge to the graduates and Gen. Harvey H. Hannah delivered the address of the evening.—Tennessee Medical College, Knoxville, graduated a class of eight, March 31. The charge to the graduates was given by Dr. Samuel L. Jones and the dean, Dr. Charles P. McNabb, conferred the degrees.—The medical department of Walden University, Nashville (McHarry Medical College), graduated a class of forty-one, March 2. President L. M. Dunton of Claflin University, Orangeburg, S. C., delivered the address of the evening. President J. Benson Hamilton conferred the degrees.

TEXAS.

Made Chief Surgeon.—Dr. James A. Moore, Marshall, has been made chief surgeon of the Texas and Pacific system, vice Dr. Benjamin F. Eads, Marshall, deceased.

Public Hospital at Waco.—The Sisters of Charity of St. Vincent de Paul have agreed on a site in Waco whereon they will build and equip a public hospital. The plans for the hospital are almost completed.

Hospital Car.—The medical department of the Southern Pacific has secured the car "Nacogdoches" and is having it fitted up as a hospital car. It will be kept in Houston, but will be ready to go promptly when and where needed.

Dallas Medical College.—The commencement exercises of the medical department of Trinity University, Dallas, were held April 1. A class of twenty-nine was graduated. Dr. Hugh L. McNew, dean of the faculty, presided and awarded the prizes; Rev. R. C. Kirkes, president of the university, conferred the degrees, and Rev. D. C. DeWitt delivered the address to the class.

VIRGINIA.

New Hospitals.—The new Protestant Hospital at Norfolk was opened to receive patients March 25. The formal opening will occur in about a week.—Winchester Memorial Hospital was opened March 18. Dr. Hunter H. McGuire is president of the institution.—Richmond Hospital, designed for the especial care and accommodation of colored patients, and purchased and equipped at a cost of more than \$9,000, was opened for the reception of patients February 16.

Personal.—Dr. Ballard R. Smith of Greenville, Va., has moved to Baltimore.—Dr. William Wertenbaker, physical director and laboratory assistant in biology at Washington and Lee University, has resigned and located at Ansted, W. Va.—Dr. William F. Creasy, Newport News, has been appointed quarantine officer of the port, vice Dr. Samuel W. Hobson, term expired.—Dr. John T. Graham, Wytheville, fell recently in his office and fractured his arm.

Dr. Drewry Vindicated.—The Senate Committee on Public Institutions met March 26 and adopted a report in relation to the charges made against the management of the Central State Hospital, Petersburg, by Dr. Richard T. Styll, Newport News. The committee found that the charges were groundless and adopted resolutions praising the administration of the affairs of the hospital by Dr. William F. Drewry, the superintendent, and stating that the business and financial affairs

of the institution have been administered in a way deserving of the highest commendation.

Eddyites and Osteopaths and Faith-Healers Defeated.—By the terms of a bill relating to the practice of medicine, as amended by the Senate and which the House passed with only one dissentient vote on March 27, healing by prayer for pay in Virginia will be unlawful and punishable by fine and imprisonment. Eddyites and osteopaths joined hands in the lobby for a bill amending the general law requiring the examination by the state medical board of all who practice medicine. The Senate's action of March 6 is a complete defeat for them. The Eddyites held that healing by prayer for pay should be licensed; the osteopaths wanted representation on the board, but failed to secure it.

GENERAL.

Mexico Quarantine Raised.—The quarantine against San Francisco has been raised by Mexico and many fully-loaded ships have hastened to resume the trade that had been interrupted. Guatemala has quarantined against all Mexican ports.

Diphtheria at Navy Yard.—An epidemic of a severe form of diphtheria has broken out at the Norfolk, Va., Navy Yard. One man has died, about 10 are sick and some 50 are suspects. There are 1,500 men on the receiving ships. Antitoxin is being freely used and all precautions taken.

Vigorous Plague Investigation in San Francisco.—A thorough exploration of Chinatown is being made by the allied health authorities. Drs. Glennan, Currie and Lloyd have had attacks of influenza, to which they were said to have predisposed themselves by their prolonged faithful work under unsanitary surroundings.

Diphtheria on Transport.—The long fight of the officials of the U. S. Transport "Buffalo" against the epidemic of diphtheria has ended. Over 150 out of over 400 were sick with the disease, but only 3 died. The outbreak was in December and the ship went to Port Royal, S. C., to establish quarantine and free the ship of the disease.

Mazatlan Plague Subsides.—On March 29 there were only 8 patients left in the lazaretto at Mazatlan. They are convalescing. The outbreak at Villa Union seems to have been suppressed, no case having occurred for almost two weeks. Two sanitary inspectors of the Mexican government were assassinated at Panuco, because of ignorant prejudice of the people.

CANADA.

To Limit Malpractice Suits.—The Council of Physicians and Surgeons of New Brunswick, acting for the New Brunswick Medical Society, has sent to the Provincial Legislature a bill with the object of securing a limit of one year to the time in which an action may be brought for injuries resulting from alleged malpractice.

Victoria, B. C., Isolation Hospital.—In 1902 the number of patients treated in the Victoria, B. C., Isolation Hospital was 92 and the total day's stay 2,101, as against 80 in 1901, with a total day's stay of 1,743. In 1901 the cost of nursing was \$1,808.45, and in 1902 it was \$3,274.75. The total cost of maintaining the Isolation Hospital was \$9,279.44.

Banishing the Cigarette from Canada.—The cigarette was debated in the House of Commons during the past week, and apparently the cigarette must go, for a motion for the prohibition of the manufacture, importation and sale of the cigarette was carried by a vote of 103 to 48. The motion simply points out public opinion on the subject, as the voting did not take place on any government legislation.

Physicians by Act of Parliament.—The "Montreal Star" states that a committee of the Quebec legislature is engaged in the benevolent task of making lawyers, druggists, dentists and physicians "by Act of Parliament." It is of course to be presumed that some of these rather fortunate individuals have found it inconvenient or impossible to pass examinations in the usual way, so they revert to the simple process of getting a bill passed by the legislature. Doctors "made-while-you-wait" is a dictum in Quebec which will no doubt produce a faction of strong force in opposition to the adoption of any such legislation as outlined in the bill now before that house seeking ratification of the Roddick law.

Regulations Concerning Diphtheria and Scarlet Fever in Ontario.—The Provincial Board of Health of Ontario has issued a special pamphlet to physicians calling direct attention to the acts as regards diphtheria and scarlet fever. As regards diphtheria the regulations require that all persons suspected of having diphtheria shall be promptly isolated until a swab has

proved the absence of the disease. Medical health officers are empowered to appoint sanitary policemen where necessary on the outbreak of either diphtheria or scarlet fever, and if these are not sanctioned by the municipality the Provincial Board of Health will then make the appointments. The minimum period of isolation for any case of scarlet fever is put at six weeks. In the case of diphtheria, the time limit shall be twenty-eight days unless swabs shall sooner show the absence of the disease.

Dominion Registration in () Hutchison, M.L.A., has moved the bill to amend the law regarding physicians and surgeons. It provides that whenever there is established under the Canada Medical Act of 1902, a register for Canada of medical practitioners under the said act, any person duly registered shall be deemed qualified and entitled to be registered in the Quebec register on payment of such fees as may be required. In explaining the provisions of his bill, Mr. Hutchison said that there were French-Canadians all over Canada who wanted to have physicians of their own nationality and language, and that, therefore, Quebec province had more to gain by the measure than any other. The bill was opposed by Dr. Pelletier on the ground that it was not for the good of the profession and that the other provinces were not up to the standard of Quebec. This is as far as ratification legislation has got in the Quebec legislature.

FOREIGN.

A London Military Hospital, to cost over half a million dollars, is planned, because present quarters are not adequate.

Plague in Egypt.—A reappearance of bubonic plague is reported from some parts of Egypt and cholera is reported at Alexandria.

New Medical and Hospital Facilities at Copenhagen.—The Danish government has appropriated nearly \$2,000,000 for the construction of a new general hospital and medical department for the university. The buildings are to be erected on a large plot of ground in the northern part of the city and to be completed in six years.

Endowments at Frankfurt for Scientific Purposes.—Nearly \$200,000 has been collected for the erection of a zoologic museum and physico-chemical institute at Frankfurt a. M. This brings to \$2,000,000 the total amount raised there during the last five years for the enlargement and endowment of scientific institutions connected with the scheme of a great university. The valuable land on which now stands the Senckenberg Hospital, etc., is to be sold and the city will donate lands on some of the newer streets in its place, which will add much to the fund.

Antituberculosis Serum from Fowls.—A prominent physician of Nîmes, France, Dr. Viguier de Maillane, having been impressed by the resistance to human tuberculosis displayed by poultry, tested the serum from fowls and found that the Koch bacillus will not grow in it, while it has a marked protecting and attenuating effect on tuberculosis in guinea-pigs. After tests on himself and another healthy person to determine its harmlessness, he applied the serum as a therapeutic measure in six cases of tuberculosis. In a communication on the subject to the Paris Académie de Médecine, he reports that the serum had an unmistakably beneficial effect. Three of the patients were very much improved; two practically cured, and only one failed to benefit from the injections. The results indicate that this new serum is most effective in the torpid form of the disease, but that it acts like a powerful tonic in all cases, reducing the cough and expectoration and improving nutrition in general.

Campaign Against Charlatans in Germany.—During the recent trial of the magnetopath Pohl at Berlin, a number of witnesses testified that they had signed testimonials, stating falsely that they had been cured or wonderfully improved, in return for a reduction in the price of treatment. Pohl claimed to heal disease by his personal magnetism which he transmitted to the patient, assuming himself in return the disease. The suffering which this entailed on him compelled him to charge unusually high for his services, about \$7.50 for a sitting. He also made use of carbonated baths. He was known to have received \$200 from one consumptive who has since died. He was condemned, for "promising the impossible," to a fine of \$250 and publication of the decision of the court. Our Berlin exchanges remark that it is a very significant fact that the newspapers which are read most extensively among the working classes entirely ignore these proceedings against charlatans which are written up in detail for the better class of lay papers.—The Posen courts have condemned a "Wonder Doctor," Scholz, to eighteen months' imprisonment for his quack practices and the injuries that have resulted therefrom.

Correspondence.

Michigan Students Protest.

DETROIT, March 24, 1903.

To the Editor:—In an editorial entitled the "Michigan Students' Protest," you took a most commendable view, but were misinformed about the students protesting. The students of the Detroit College of Medicine are in favor of the bill, and I understand that the students of Michigan University at Ann Arbor are also. In fact, the students of reputable colleges have no fear of being able to pass, and are always in favor of a higher standard.

J. H. CARSTENS.

To the Editor:—In view of the editorial which appeared in THE JOURNAL, March 21, we wish to state that we regret sincerely that the article was so worded that the impression might be given that the medical students of the University of Michigan are opposed to the passage of the Nottingham bill.

We wish to state that the medical students of the University of Michigan have done nothing, either collectively or individually, to oppose this bill or any of its provisions.

Furthermore, we are unanimously in favor of any means which will tend to raise the standard of medical practice in Michigan, and, believing that the Nottingham bill, if enacted, will have this effect, we are heartily in favor of its passage.

Unanimously adopted by class of 1903. President, F. C. Penoyar; secretary, Maude G. Hinman.

Class of 1904. President, W. A. Scott; secretary, Curtis Evans.

Class of 1905. President, C. W. Merkel; secretary, D. E. Burnett.

Class of 1906. President, J. F. Hastings; secretary, Z. K. Brinkerhoff.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

THE SOURCE OF VACCINE.

EVANSVILLE, IND., Feb. 27, 1903.

To the Editor:—From what source do vaccine laboratories or vaccine farms obtain their original vaccine virus? Do they use the smallpox lymph, or the cowpox lymph, which comes originally from the "grease heal" of the horse? A scientific question of inestimable value is herein to be considered and should be known by every physician. The safe preventive from smallpox would be to vaccinate with the vaccine obtained from cows that had been inoculated by lymph originally obtained from smallpox. F. L. DAVIS.

ANS.—Following the receipt of the above, we wrote to a number of manufacturers of vaccine and quote below from certain of their replies.

The H. K. Mulford Company stated that vaccine virus employed by them is obtained at short intervals from several sources, namely:

"The Jenner Institute of Preventive Medicine, London, England; Chambon & Menard, Paris, France; Institute Vaccinale, Berne, Switzerland; Pasteur Institut, Lille, France, and in addition to these from two sources in the United States. The vaccine virus on receipt is tested and those strains which produce the most typical physiological effect are used in propagating the virus."

Parke, Davis & Co. said: "Our seed vaccine we have obtained from different sources, chiefly European. We have secured various supplies from the Imperial Vaccine Institute of Vienna. Some of the best seed has come from the fine establishment conducted at Berne, Switzerland. All the seed used by us has been, we are perfectly sure, the product of the calf or heifer—not in any instance the virus obtained from human smallpox pustules.

"It is, however, our conviction that smallpox and cowpox are one and the same disease, manifesting itself differently in the two animals under the profoundly modified biological conditions—smallpox in the man, cowpox in the animal. Several German investigators have repeatedly succeeded in directly inoculating calves with the human virus, thus obtaining bovine vaccinia which has in turn produced in human beings perfectly normal vaccinations, affording full protection. The great English authority, Copeman, stated last summer in person to our Dr. Houghton that he had repeatedly inoculated monkeys with the virus of human smallpox, passing it along from one monkey to another, and with the virus thus obtained he has produced in calves genuine vaccinia vesicles, the pulp of which has proved an effective means of inoculating and

protecting human beings. Copeman added that hundreds of people vaccinated with lymph obtained from calves which in turn had been inoculated with virus secured from these monkeys, had exhibited typical 'takes' and many of these people had been subsequently exposed to smallpox without contracting the disease—a fact which would seem to establish the immunizing power of the particular lymph. Clearly, then, cowpox is the result of the direct introduction of smallpox virus into the animal organism, or else the two parallel maladies emanate from the same common cause. The identity of their source is to our mind established by the great preponderance of evidence and authority."

Frederick Stearns & Co. say:

"The original source of our vaccine virus was from vaccine obtained from heifers that had been previously inoculated with smallpox lymph taken from a human being and that too, not indirectly as from cow-pox or from 'grease heal' in some mysterious round-about way, but directly from human being to heifer, thus modifying it by its passage through the bovine so that it will no longer produce smallpox by direct contagion, but a modified form of it known as vaccine vesicle which confers immunity to the smallpox disease.

"There may be a natural cow-pox, but in our opinion there is no such thing as a cow-pox which will confer immunity to smallpox which had not originally the human source, and as for 'grease heal' it is utterly absurd and unscientific to think of such a thing. We think you will find that the best authorities and the best masters of the art agree with us on this point."

H. M. Alexander denies most emphatically that vaccine is cow-pox and affirms that cow-pox is smallpox. He says further:

"My experiments proved to me beyond any reasonable doubt that vaccine virus was simply smallpox passed through the cow and that it was at first very weak in its action, the first animal inoculated from smallpox direct always taking in a very uncertain manner; but the contagious character so far as the human family was concerned was lost at once. When passed through a second animal it began to assume many of the characteristics of the vaccine disease as seen in the stables. The third and particularly the fourth in all instances was so characteristic of kine pox that it was used and successfully used in a great many experimental cases.

"My continued experience with horse grease has caused me to believe that there is no such thing as horse-grease cow-pox; or, if there is, then the horse grease as we know it to-day is not the horse grease referred to by Jenner."

DYNAMITE HEADACHE.

RUSSET, W. VA., March 26, 1903.

To the Editor:—In your query column, I should be obliged if you would suggest some remedy for what is known here as "dynamite headache." This is caused by the inhalation of the fumes from the dynamite which is used in blasting. I have tried acetanilid in doses of 7.5 to 10 grains combined with caffeine cit. and monobromate of camphor, but in a great many cases this has no effect and I am compelled to use morphin before any relief is obtained.

JOHN W. BROWN.

ANS.—On the theory that dynamite cephalalgia is a congestive headache due to vasomotor (arterial) paralysis of the cerebral vessels, hypodermic injections of ergotin, atropin and strychnin, and cold applications to the head have been recommended. The best remedies, however, according to Key (Oliver: "Dangerous Trades," p. 614) are strong coffee, and a linseed poultice to the back of the neck. This is probably a deduction from practical experience, and there may be still others used in dynamite works. Most persons soon become habituated to the fumes and cease to suffer, but there is a great difference in the susceptibility of different persons. We would not suppose acetanilid to be a very satisfactory remedy.

State Boards of Registration.

New Law in Nebraska.—A new law has just passed the Nebraska legislature which requires an examination as well as a diploma, of all applicants for license to practice medicine in the state. Heretofore a diploma from a recognized and approved college was all that was necessary. We shall publish a full abstract of the law next week.

Alabama Law.—The recent law defining the divisions of practice and exemptions from examination therein in Alabama is as follows:

An Act to prescribe the branches of medical learning upon which applicants for the privilege of treating the diseases of human beings in this state must be examined, and to provide for the issuance of certificates of qualification therefor.

Section 1. Be it enacted by the legislature of Alabama, That any applicant for a certificate of qualification to treat the diseases of human beings by any system of treatment whatsoever shall, according to rules prescribed and standards established by the Medical Association of the State of Alabama, be examined by one of the authorized boards of medical examiners of this State in the following branches of medical learning, to-wit: Chemistry, anatomy, physiology, the etiology, pathology, symptomatology and diagnosis of diseases; obstetrics and obstetrical operations, gynecology, minor

and major surgery, physical diagnosis, hygiene, and medical jurisprudence, and should said applicant be found proficient in said branches of medical learning a certificate of qualification in such form as shall be prescribed by the said Medical Association of the State of Alabama shall be issued to him, which shall entitle him to treat any and all diseases of human beings in this state in any manner that he may deem best.

Sec. 2. Be it further enacted, That when any applicant states in writing that he has neither studied nor proposes to practice major surgery, said applicant shall be exempt from examination in said branch of major surgery, and should he be found proficient in other branches of medical learning named in Section one (1) of this Act that a certificate of qualification in form to be likewise prescribed by the Medical Association of the State of Alabama shall be issued to him, which shall entitle him to treat all diseases of human beings in this state in such manner as he may deem best except by the practice of major surgery.

Sec. 3. Be it further enacted; That all laws and parts of laws in so far as they conflict with the provisions of this act be and the same are hereby repealed.

Marriages.

R. B. BELL, M.D., to Miss Julia M. Stewart, both of Nashville, Tenn., March 26.

ROBERT M. STONE, M.D., Omaha, Neb., to Miss Belle Noxon of Bee, Neb., April 5.

EDGAR M. HERMAN, M.D., to Miss Mary Ellerington, both of Yonkers, N. Y., March 27.

MEYLER D. GIBBS, M.D., Willow, N. M., to Miss Grace Wilson of Colorado Springs, Colo., March 9.

D. EDWIN STONE, JR., M.D., Emmitsburg, Md., to Miss Elizabeth Hammond Downey, at New Market, Md., March 25.

Deaths.

James A. Steuart, M.D., died at Baltimore, from pneumonia, March 27, aged 74. He was the son of Dr. Richard Steuart, founder of Maryland Hospital for the Insane and grandson of Dr. James Steuart, a graduate of Edinburgh University. Dr. Steuart graduated in medicine from the University of Maryland in 1850. From 1850 to 1854 he was physician to the Baltimore General Dispensary and from 1854 to 1861 assistant physician at the Maryland Hospital for the Insane. From 1873 to 1889 he was health commissioner of Baltimore, and by his energy was instrumental in arresting several threatened epidemics of smallpox and yellow fever. He was secretary of the State Board of Health from 1894 to 1897. He was surgeon to the First Maryland Infantry, a member of the American Public Health Association and of the Medical and Chirurgical Faculty of Maryland.

John P. Wood, M.D. Transylvania University Medical Department, Lexington, Ky., 1828, the oldest practicing physician in the United States, if not in the world, of Coffeetown, Kan., died at the home of his brother in Thomas, Okla., March 28, from paralysis, after an illness of one week, aged 101 years, 2 months and 24 days. Dr. Wood served as surgeon of Henry Clay's regiment in the Mexican War, in which he was seriously wounded. At the close of the war he settled in Danville, Ill., and in 1853 moved to Kansas.

Goronwy Owen, M.D. University of Pennsylvania, Philadelphia, 1857, professor of obstetrics and diseases of women and children, Medical College of Alabama, a surgeon in the Confederate Army during the Civil War, a recognized authority on obstetrics, died at his home in Mobile, March 30, from paralysis, aged 69.

Frank Van Schoiack, M.D. University Medical College, Kansas City, Mo., 1901, for many years at Ottawa, Kan., more recently at Ponca City, Okla., died recently at the latter place, from pulmonary tuberculosis, following pneumonia.

James Jones Singer, M.D. Jefferson Medical College, Philadelphia, 1871, for 26 years surgeon of the Baltimore and Ohio Railway at Connellsville, Pa., died at his home in that place, March 28, after a long illness, aged 53.

Donald Gilbert Gordon, M.D. Trinity Medical College, Toronto, 1886, professor of hygiene in Trinity Medical College, died at Church Home Hospital, Baltimore, March 28, aged 44, of tubercular peritonitis.

Walter S. Leaming, M.D. Jefferson Medical College, Philadelphia, 1882, postmaster of Cape May, N. J., formerly state assemblyman and senator, died at his home in Cape May, March 30, aged 48.

Richard Johnson, M.D. Harvard University Medical School, Boston, 1865, ex-president Prince Edward Island Medical Society, died suddenly a few days ago at his home in Charlotte-town, P. E. I.

George B. Mott, M.D. College of Physicians and Surgeons of Ontario, Toronto, 1869, who practiced for a number of years at Petrolia, Ont., died at Wallaceburg, Ont., January 17.

W. Frank Lee, M.D. Kansas City (Mo.) Medical College, 1900, of Beatrice, Neb., died at Las Cruces, N. M., March 23, from tuberculosis, after a long illness, aged 26.

Andrew Halliday, M.B. Glasgow University, 1891, associate professor of pathology in the Halifax Medical College, died at Halifax, from tuberculosis, March 10, aged 36.

George H. Perrin, M.D. University of Maryland, Baltimore, 1895, died from diabetes, March 30, at his home in Durand, Mich., after an illness of one month, aged 35.

David H. Stever, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1876, died from pneumonia, at his home in Fairfield, Iowa, March 26, after a short illness.

Robert M. Bostwick, M.D. University of Louisville, 1857, a veteran of the Civil War, died at his home in Memphis, Tenn., March 28, after a brief illness, aged 69.

William H. Tutt, M.D. Kentucky School of Medicine, Louisville, 1890, of Campton, Ky., died from paralysis at Jackson, Ky., after a short illness, March 31.

Robert M. Cooper, M.D. Western University Medical Department, London, Ont., 1889, of London, Ont., died suddenly, March 21, from epilepsy, aged 33.

George Stewart, M.D. University of the Victoria College, Cobourg, Ont., 1869, of Port Rowan, Ont., died January 28, from apoplexy, aged 62.

A. M. F. Hawkins, M.D. Atlanta (Ga.) Medical College, 1876, died at his home in Ball Ground, Ga., March 29, from pyemia, after a short illness.

Kenneth D. McKenzie, M.D. Halifax (N. S.) Medical College, 1887, Medical Health Officer of St. Johns, Newfoundland, died December 24, 1902.

Alvin W. Tyler, M.D. St. Louis Medical College, 1878, died at his home in Tulare, Cal., March 18, from heart disease, aged 71.

Deaths Abroad.

Dr. Salomon, vice-president of the Union des Syndicats Médicaux de France and author of a number of works on trade intoxications, etc., died at Savigné.

J. Deutsch, M.D., publisher of the "Aerztliche Zentralzeitung" at Vienna.—Dr. J. Gine y Partagas, professor of pathology at Barcelona.—Dr. Didiot, formerly chief of the French military sanitary department.

E. Bottini, M.D., Pavia, professor of surgery at Pavia and senator of Italy, died at his villa at San Remo, March 11, aged 68. His family is indissolubly connected with the Bottini operation, and he was one of the most advanced surgeons of his day and country.

G. Bouilly, M.D., professor agrégé of surgery at Paris, died in that city, March 14, aged 55. He had the reputation of being the busiest surgeon in Paris, and was appointed president of the Société de Chirurgie last year. Abdominal surgery and gynecology were his specialties and he was a frequent contributor to medical periodicals devoted to these branches.

Miscellany.

Hydrophobia.—From the extended comment recently in the public press one might infer that there was a genuine epidemic of rabies in New York City. Such is not the case, although special attention has been directed to the fact that this disease is present at all seasons by the recent sad death of Dr. H. P. Loomis' child. According to the statistics of the health department, there have been, on an average, in recent years about 7 deaths annually from hydrophobia. On the other hand, Dr. H. D. Gill, a veterinary surgeon, asserts that the dumb form of rabies is quite common among animals, and that unless it happens that a person has been bitten by an animal so affected the case does not come to the notice of the board of health laboratory. He finds that about a dozen cases of rabies were observed in the past year by each of several well-known veterinarians. Because of the rarity of the disease in the human being very few physicians have had an opportunity of

becoming familiar with its symptomatology. To facilitate the detection of rabies in dogs Dr. Gill offers the following suggestions:

Beware of a dog when it becomes dull and hides away; appears restless; always on the move and prowling; whose countenance is sombre and sullen; walks with head down like a bear. Beware of one who barks at nothing when all around is still. Beware of a dog that scrapes incessantly and tears up things. Look out for the dog which has become too fond of you and is continually trying to lick your hand and face. Beware above all of the dog which has difficulty in swallowing, which appears to have a bone in its throat, and one that has wandered from home and returns covered with dirt, exhausted and miserable.

It is generally agreed, says Dr. Gill, among physicians who have studied the subject, that the disease is readily controlled by the enforcement of a muzzling ordinance, but unfortunately the control of dogs in New York City is in the hands of the Society for the Prevention of Cruelty to Animals, whose president declares that, in his large experience of thirty years, he has not seen a single case of rabies, and that muzzling a dog makes him sick and cross and much more likely to bite.

American Medical Temperance Association.—The twelfth annual meeting of this association will be held in New Orleans, May 6 and 7, 1903, each session beginning at 9 a. m. An address will be given by the honorary president, Dr. N. S. Davis, Chicago, and the annual address by the president, Dr. Winfield S. Hall, Chicago. Papers will be read by Dr. H. O. Marey, Boston; H. D. Didama, Syracuse, N. Y.; J. W. Grosvenor, Buffalo, N. Y.; T. D. Crothers, Hartford, Conn.; T. A. Mac-Nichol, New York; C. E. Stewart, Battle Creek, Mich.; John Madden, Milwaukee, Wis.; D. S. Reynolds, Louisville, Ky., and others. This association was organized in Washington, May 7, 1891, and holds its annual meeting at the same time and place as the American Medical Association. The following extract from the constitution of the Association will indicate its plan and purposes:

The object of this association is to encourage and promote the clinical, therapeutic, pharmacologic, and chemical study of alcohol in health and disease. It also aims to gather, compile, and make available the studies and experiences of medical men in all parts of the country concerning the use of alcohol and to formulate such definite facts as can be utilized and made available in the practice of medicine. It is assumed that all physicians interested in the study of alcohol should approach it from the scientific side alone, unbiased by any personal considerations of custom or habit, and with no object other than to ascertain the facts concerning this question irrespective of all possible conclusions. This is the spirit and purpose of the association, and it is entirely independent of any other object except the purely scientific question of the nature and character of alcohol.

All regular practitioners of medicine may become members by making application to the secretary. It will be evident to every one that the field of this association is rapidly widening and the demand for studies in this direction is constantly increasing. A very cordial invitation is extended to all persons interested in this subject to unite with this organization and lift the whole subject out of the plane of quackery into the atmosphere of clear science. All communications addressed to the secretary, T. D. Crothers, M.D., Hartford, Conn., will receive prompt attention.

CLIPPINGS FROM LAY EXCHANGES.

Easter Lays.

MASSAGERY IS GOOD.

"Dr. — has removed her massagery and beautifying business to Chicago, where a wider field awaits her."—Monroe (Wis.) Sentinel.

WANTED—A DOCTOR TO BURY.

"We are hoping a lively hustling 'Doc.' will settle in our township. Our much lamented citizen Doc — was buried over a year ago and we think it a good place for one."—Tylersville Topics, "Oneida (N. Y.) Despatch."

GASTRIC VISCERA RUPTURED.

"August — was kicked in the abdomen by a horse on Tuesday and is in grave danger of losing his life. . . . A severe rupture of the internal organs of the stomach is feared and an operation will be necessary."—Denver Times."

WHY NOT RIDE?

"Dr. —, we understand, has been made a member of the International Medical Congress, which meets in Madrid, Spain, in April. The doctor says he will be unable to go, on account of the bad condition of the roads."—Tell City (Ind.) Journal, March 18, 1903.

Dr. H. D. Gill, City Librarian.

Medical College 29/1/11

PIE BACTERIOLOGY.

"Dr. Klein is an expert on the Government Medical Board. After investigating pies on behalf of the Government he reports: 'All contained' the spores of anacrobic non-pathogenic bacillus balyricus, the spores of bacillus mesentericus vulgatus and slaphylococcus albus of at least two different kinds.'"—*"Wilmington (Del.) Republican."*

IMPORTED FÆCES, ET AL.

The program of the twenty-eighth semi-annual meeting of the District Medical Society of Central Illinois, as published in the *"Jacksonville (Ill.) Courier,"* Oct. 30, 1902, contains the following interesting titles of papers: "Etiology of Typhoid Fever; Sacconia; Serrectory Neuroses of the Stomach; Prostatacromy; Leukemia and Pseudo Lukemia; Imported Fæces; Theuterine Curelto; Notes from New York Roby Clinic."

COMPLETE GASTRO-ENTERECTOMY.

In a report of a gunshot-wound case, the *"Norfolk (Va.) Despatch"* thus describes the operation. . . . "The stomach and bowels were taken completely out of the negro, all of the food was taken from the stomach and the perforations in it dressed. The stomach was then put back in the body and the incision through which it was taken out stitched up, leaving a short opening through which the wound might be allowed to bleed."

FOREIGN BODIES IN THE LEGS.

The following advertisement appeared in the *"Westminster Gazette,"* last September: "An aged Gentleman (widower, no children) will be requiring soon an experienced Pensioned Army or Navy Valet. His health is perfectly good, but he has been severely injured by the upsetting of an express train in his legs. He wishes help when he gets out of his bath, and dresses, and also in undressing at night. Any applicant must be a member of the Church of England, and state whether married or single.—Apply, &c."

PULMONARY JERKS.

"Shot Through Air with Bullet's Speed—Man's Lungs Were Jerked From Their Fastenings—Pneumonia Developed in Few Hours—Victim Lives. The condition of — who fell from . . . railway train . . . presents an interesting study. . . . The young man was injured internally and in an extremely unusual way. His lungs were literally torn from their fastenings, besides other injuries received. . . . His frontal bone was fractured. . . . In addition . . . his inner organism was badly shocked, particularly his lungs."—*"Atlanta (Ga.) Journal."*

NATIONAL MEDICINE AND FOOD BUREAU.

Proposed to Secure Pure and Honest Drugs, Chemicals and Foodstuffs.

The following statement in regard to the proposed National Bureau of Medicines and Foods has been sent us by those who have been giving the matter thought: The subject will be brought before the House of Delegates of the American Medical Association at New Orleans by a provisional committee appointed for the purpose of enquiring into the subject. The committee consists of Drs. E. Eliot Harris, New York; Solomon Solis Cohen, Philadelphia; N. S. Davis, Jr., Chicago; H. Bert Ellis, Los Angeles, and Philip Mills Jones, San Francisco.

The idea of establishing a board of qualified experts who should represent the interests and the support of the professions of medicine and pharmacy, and through the medium of such a board secure: 1. More general conformity to the standards of the pharmacopeia; 2, drugs, chemicals and foodstuffs that will be actually as labeled and can be relied on; and 3, deal in a proper professional and ethical manner with the large and ever-increasing number of proprietary preparations and mixtures that are being presented to the medical profession, was first suggested by Dr. F. E. Stewart at the meeting of the American Medical Association in 1881.

This idea has been elaborated and plans have been formulated which it is thought will secure the objects desired. These plans have been approved by a number of representative manufacturers, physicians and pharmacists, and it is evident that if the professional interests and the people of this country (and

especially the members of the American Medical and the American Pharmaceutical Associations) really desire relief from the present unfortunate and distressing condition of materia medica and pharmacy, and of adulterated and dishonest foodstuffs, such relief is at hand.

Primarily, this plan contemplates the voluntary association of honest manufacturers and pharmacists who will agree with the board of experts representing pharmacy and medicine, on standards of identity, purity, quality and strength, to which their products shall comply, and will further agree to carry out these standards and to comply with the necessary rules governing manufacture, etc.

Organization for the purposes indicated will be begun by the formation of a corporation on the membership plan—no stock issued and not for profit—under the name of the National Bureau of Medicines and Foods, and all the members of the American Medical and the American Pharmaceutical Associations are made members of this bureau. It is proposed that the board of directors governing this bureau be elected by these two associations, each having five directors, one from each association retiring annually and a successor elected for five years.

In order to indicate to the physician, the pharmacist or the purchaser such articles as comply with the standards of identity, purity, quality and strength, and may, in consequence, be relied on to conform truthfully with the labels affixed, and also to reward the honest manufacturer and pharmacist for his honesty and aid him in competition with dishonest or impure products, those manufacturers and pharmacists who affiliate with the bureau in this work will be authorized to print on the label of such of their products as are placed under the supervision of this bureau a certificate of identity, purity, quality and strength, of a form to be indicated by the board or directors.

All possible precautions in the way of frequent inspection, analysis or assay will be taken by the bureau in order to keep certified products up to the standard and to protect the bureau certificate from fraud. In addition to the original analysis of each "batch," every article bearing the bureau certificate will be purchased in open market from time to time and submitted to analysis, assay or comparison with standard samples.

The bureau will also gather and diffuse reliable information relative to materia medica products, chemicals and foodstuffs and to those who manufacture or deal in the same, and it is believed that in a comparatively short time such information will replace and do away with the one-sided and unreliable trade literature, which is at present, in many instances, the only available source of information.

The work of the bureau will be purely commendatory and not in any way condemnatory, so that it can in no event become an agent of blackmail.

As the bureau is not a commercial enterprise, is not organized for profit nor for money making, only the actual expense of doing the work required will have to be defrayed. It is proposed to assess this actual cost on the various manufacturers and producers whose goods are certified by the bureau, each in proportion to the amount and value of the goods so certified. This feature of the plan has been considered satisfactory by those who have signified a willingness to affiliate with the bureau.

In addition to the two associations already mentioned, any scientific society that may vote to affiliate with the bureau may do so, and its members then become members of the bureau; and, further, any person who so desires or who is willing to signify his approval of the aims and objects of the bureau, may become a member on the payment of \$1 per year.

CERTIFICATE OF INCORPORATION.

We, the undersigned, all being persons of full age, and at least two-thirds being citizens of the United States, and at least one of us a resident of the State of New York, desiring to form a corporation, pursuant to the provisions of the Membership Corporations Law of the State of New York, do hereby make, acknowledge and file this certificate for that purpose, as follows:

First. The particular object for which this corporation is to be created is: To determine on and fix standards of identity, purity,

quality and strength and to secure adherence to prescribed formulas of all drugs, chemicals, foodstuffs, and of a use in the arts and sciences or for human accurate and reliable information as to such or products and as to those making or dealing in the same; to procure uniformity and certainty in the customs, usages and methods of manufacture of those engaged in the foregoing or allied trades; to supervise the manufacture, preparation or production and distribution by its members of all commodities, articles or preparations mentioned, and, on sufficient evidence that the standards of identity, purity, quality and strength, as well as adherence to prescribed formulas have been maintained, and that all requirements for manufacture, preparation or production, as set forth in the by-laws, rules or regulations made and provided have been complied with by the member manufacturing, preparing, producing or distributing such commodities, articles or preparations, to issue to such member a certificate of identity, purity, quality or strength and compliance with prescribed formulas, which certificate shall be of the form and nature and shall be used in the manner set forth in the by-laws, rules or regulations for that purpose made and provided; provided, however, that no medicinal preparation shall be so certified unless the formula, couched in the ordinary terms of chemistry and pharmacy, and giving the qualities of the active ingredients, shall have been or shall be published; to settle differences between its members, and to promote a more friendly intercourse between business men and between its members; to aid, stimulate and encourage research, investigation and study that will tend to enlarge, improve or increase and diffuse knowledge and information of materia medica, chemistry, pharmacy, pharmacology, pharmacognosia, pharmacodynamics, therapeutics and all arts and sciences allied thereto.

Second. The name of the proposed corporation is the "National Bureau of Medicines and Foods."

Third. Its principal office is to be situated in the City of New York.

Fourth. The number of its directors shall be ten.

Fifth. The names and places of residence of those persons to be its directors until its first annual meeting are as follows:

Sixth. The annual meeting shall be held on the _____.

Book Notices.

THE PROCEEDINGS OF THE CHARAKA CLUB. Volume I. Svo. Pp. 97. Price, \$3.50 net. Printed for the Club by William R. Jenkins. New York: William Wood & Co. 1902. Limited Edition.

One of the most select clubs of which we have read was the X Club founded in 1864 and which existed for twenty-nine years. It consisted of Huxley, who was responsible for its creation; George Burk, secretary of the Linnean Society, and at one time president of the Royal College of Surgeons; Edward Frankland, the chemist; Hirst, the mathematician; J. D. Hooker, the great botanist; Sir John Lubbock, William Spottiswood, Herbert Spencer and John Tyndall.

These nine at one time tried to elect a tenth member, but failed, hence probably it was called the X Club. Huxley called it a scientific caucus or ring, but that it had no *raison d'être* beyond the personal attachment of its original members.

The Charaka Club goes the X Club one better, as far as the number of members is concerned, for it has ten. They are Drs. Pearce Bailey, John S. Billings, John Winters Brannan, Joseph Collins, L. Dana, Arpad G. Gerster, Ward A. Holden, Frederick Peterson, B. Sachs and George F. Shradley, with one lonesome honorary member, William Osler. The *raison d'être* is "a number of medical men of this city who were interested in the literary, artistic and historic aspects of medicine, and who hoped to find some recreation, if not profit, in dealing with this, the less serious, side of their art," concluded to be a club. We are not told that one of the objects is the publication of books, but its first venture in this line is before us, and it is something of which its members may be proud, not alone for its value from the literary viewpoint; but for its uniqueness and for its typographic make-up.

The first article is on Hindoo Medicine. In this Dr. Sachs tells us about the medicine of the Hindoos, and presents a very interesting, although brief, account of our professional Indian brethren of long ago. The club was named after one of the Hindoo medical writers, Charaka, whose work is still extant and from which Sachs quotes freely. Three poems by Peterson follow, one on "Hereditry," one on "Environment," and one on "Solitude." A. G. Gerster writes "On the Hippocratic Doctrine of the Injuries of the Cranium." Dr. Dana tells us about Esculapius, giving a biographic sketch, as it were, "correctly as anything not the least true can be correct." This article is accompanied with fifteen full-page plates illustrating the statues, etc., of the God of Medicine, together with a double-page plate showing "The Hieron, or Sacred Grove," and two half-page plates of the Temple of Esculapius at Epidaurus. Dr. Dana also writes very entertainingly of "The Evil Spoken of

Physicians," and makes some happy quotations. He thinks that our profession is not deserving or receiving as many gibes as has been the case in the past.

Dr. Collins makes two contributions: one about a man who was in love with his typewriter, and didn't know it. He wanted Collins to hypnotize her, and although he, Collins, cruelly refused to do so, nevertheless charged him for doing it. The other contribution is also a story of love, but not a love story, and bears the title "A Contribution to Ethics."

"The Ophthalmology of the Greeks," by Dr. W. A. Holden closes.

The book is issued in a limited edition, of which only 257 copies are for sale.

TWENTIETH CENTURY PRACTICES. An International Encyclopedia of Modern Medical Science, by Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M.D., New York City. Volume XXI. Supplement. Cloth. Pp. 845. Price, \$5.00. New York: Wm. Wood & Co. 1903.

While only two years have elapsed since the completion of this series the advances have been sufficiently marked in many branches in medicine as to justify already a supplementary volume. In this one the articles have been prepared by men of first-class standing, Europe as well as America being liberally drawn on. As instances of this we may note Carl Beck on the Roentgen ray, Reginald Harrison on kidney disorders, Lydston on prostatic and urethral diseases, von Noorden on diabetes, Allen on skin diseases, Einhorn on diseases of the stomach, Vaughan on ptomaines, toxins, etc., Sternberg on yellow fever, Shiga on bacillus dysentery, Babes on tetanus, etc., etc. Everyone who possesses the original series will want this volume as a compendium of the best data that have been accumulated since the beginning of its appearance and those who have not, will find it, in the main, an excellent statement of the progress of medicine during the past few years. One or two of the articles are almost too brief to be satisfactory, as that of Blandford on insanity, which touches only on the question of the autotoxic theory of Ford Robertson. There has been more progress even in this much abused subject that might have been noticed. The work is beautifully gotten up and elegantly illustrated.

A REFERENCE HANDBOOK OF THE MEDICAL SCIENCES, Embracing the Entire Range of Scientific and Practical Medicine and Allied Science. By Various Writers. A New Edition. Completely Revised and Rewritten. Edited by Albert H. Buck, M.D., New York City. Volume V. Illustrated by Chromolithographs and 576 Half-tone and Wood Engravings. Cloth. Pp. 873. Price, \$7.00. New York: Wm. Wood & Co. 1902.

This fifth volume of the new edition of Wood's Handbook is one of the best that has appeared. Besides a series of articles on subjects which form in themselves a very valuable composite text-book, it contains many other valuable monographs, such as that on the larynx by Makuen, on the liver by Musser, on the lymphatic system by Gage, on milk by Kober, and a vast number of others equally worthy of notice, but which, from their very number, prevent specification.

Association News.

ENTERTAINMENTS AT NEW ORLEANS.

PROVISIONAL LIST OF EVENTS ARRANGED BY THE ENTERTAINMENT COMMITTEE.

From the "New Orleans Picayune" of April 1 we clip the following paragraphs:

Tuesday, May 5, in the evening, there will be a reception at the Palm Garden of the St. Charles Hotel which will cost about \$1,000, exclusive of the music. The object is that the visiting physicians and ladies shall become acquainted with New Orleans people and that the ladies of the city shall assist in receiving. The reception will last from 5 to 7.

On Wednesday two large private receptions will be given, one an afternoon tea and one at night. On Thursday there will be a grand fête champêtre at the City Park, with music and refreshments, and on Friday there will be a boat ride on the river at which about 2,000 people will be entertained, and the ride will end at 6 p. m. and finish the social features of the convention.

There will be at the fête champêtre brilliant illuminations. Skiffs will be lighted with gay lanterns and lit about among the lakes, and the night will be made gaudy with color and pleasure.

Three or four physicians have promised receptions for various sections of the convention.

A trip to Cuba and fishing trips are contemplated. Mrs. Samuel Delgado has been made chairman of a ladies' committee, and sixty or seventy-five ladies have been asked to serve on

the committee, which will undertake the general charge of the ladies who come with the physicians, at times when they are not at any entertainment given by the Entertainment Committee, and they will supervise entertainments, sightseeing, etc., in the mornings. Notices have been sent to these ladies, and as soon as a sufficient number of answers is received the committee will be called together to discuss plans.

It was reported that Dr. Rudolph Matas will have charge of a smoker for the Section on Surgery at the West End Hotel on Tuesday night. Dr. Dyer will have charge of the reception for the Section on Dermatology, and Dr. De Roaldes for the Section on Laryngology, and Dr. Henry Dickson Bruns that of the Section on Ophthalmology.

Dr. J. D. Bloom intends giving a yacht ride to special guests. It was decided that all the smokers for the sections be referred to the Chairman, who will refer them to the physicians who will have charge, thus relieving the Banquet Committee, which will have charge of the arrangements of all banquets which sections or organizations desire to give.

Excursions.

The excursions, which are always such an enjoyable feature of the meeting, are briefly mentioned on page 1047 of this issue. Especial attention is called to the trip to San Antonio, because that city was a candidate last year for the privilege of entertaining the Association in 1903. Doubtless many will wish to take this trip through the oil and rice fields of Louisiana and Texas to the historic, quaint and beautiful city of San Antonio.

REGISTRATION OF MEMBERS.

The registration of members at the annual session is always a simple matter to those who understand what is required.

Those registering come under one of three classes, 1, those who have already paid the annual dues for the current year; 2, those who have not paid the dues, and 3, those who join the Association at the session.

1. Those who have paid for the current year—and these have the least trouble—have been supplied with a small pocket card to take to the session, which is also a pocket certificate. To register one will fill out a registration card, found at the place of registration, and present this with his pocket card at the indicated window, where he will receive his badges, etc.

2. Those who have not paid their dues will fill out card as above and present it, with the annual dues, at the "Cash" window and receive their badges, etc. (Those who are behind in their dues must pay the back dues as well as those for the current year.)

3. Any one desiring to join the Association must have a certificate showing that the applicant is a member in good standing of an affiliated association in the state in which he resides. He will also fill out the registration card and present it, with his certificate and five dollars, at the window marked "New Members."

RAILROAD RATES.

SUMMARY OF THE TRANSPORTATION ARRANGEMENTS FROM ALL POINTS OF THE COUNTRY.

A résumé of the announcements that have been made from time to time in THE JOURNAL concerning transportation to New Orleans will show the following facts for the guidance of those who will attend the session: One fare for the round trip has been granted by the South Eastern, South Western and Central Passenger Associations, and also by roads covering a portion of the Western Passenger Association. This territory comprises Louisiana, Texas, Oklahoma, Indian Territory, Arkansas, Mississippi, Alabama, Florida, Georgia, South Carolina, North Carolina, Tennessee, Virginia, Kentucky, Missouri, Iowa, Minnesota, Wisconsin, Illinois, Indiana, Michigan, Ohio, and a portion of West Virginia, S. Dakota and Kansas.

From all western states not mentioned above, the regular summer excursion arrangements will prevail. From the eastern and New England states not mentioned, those who attend the session will have to pay a fare and a third rate in New England and the regular excursion rates through New York and Pennsylvania. This will take them to Washington or to Pittsburg or to Charleston, W. Va., or to such other point at which they will enter the Central or South Eastern Passenger Association territory. From these points on to New Orleans, half fare for the round trip will be the rate.

As a further guide to indicate the railroad expenses, we give the following rates for the round trip from some principal cities of the United States:

Austin, Tex.	\$17.80	St. Augustine, Fla.	\$20.60
El Paso.	31.90	Cincinnati.	21.00
St. Paul.	34.00	New York City.	37.50
Minneapolis.	34.00	Philadelphia.	33.50
Chicago.	23.00	Pittsburg.	29.35
Omaha.	29.50	Indianapolis.	22.25
St. Louis.	18.00	Nashville, Tenn.	16.75
Des Moines.	27.85	Cleveland.	28.25
Sioux Falls, S. D.	34.84	Baltimore.	29.50
Buffalo.	31.85	Washington.	27.50
Boston.	42.15	Louisville.	19.00
Richmond, Va.	26.50	Evansville, Ind.	17.75

Extension of Limit of Ticket.

The regulations governing the round-trip-for-one-fare rate are as follows:

RATE.—One lowest regular first-class tariff (not temporarily reduced) fare to New Orleans and return.

DATES OF SALE.—Tickets to be sold on May 1-4, inclusive.

LIMIT OF TICKET.—Tickets to bear final limit of ten days from date of sale, except that by depositing tickets with joint agent not later than May 12, 1903, and on payment of fee of fifty cents at time of deposit, final limit may be extended up to and including May 30, 1903. Tickets to be limited for continuous passage in each direction, going trip to commence date of sale and return trip date of execution.

FORM OF TICKET.—Ironclad signature form of ticket to be used, providing for punch description of passenger going and return transit limits and execution by agent limit by depositing tickets with joint agent and payment of terminal line at New Orleans, also for extension of fee of fifty cents at time of deposit. Exchange orders must also require execution at New Orleans.

JOINT AGENCY.—The joint agency for deposit and extension of tickets will be located in Room 204, No. 204 Camp Street. The agency will be open from 8.00 a. m. to 8.00 p. m., and will be conducted in the name of Joseph Richardson, special agent. Tickets must be deposited personally by original purchaser. Tickets will be extended by means of an extension pasteur printed of perfect safety paper of the American Association of General Passenger and Ticket Agents, the signature of special agent, Mr. Richardson, being affixed by means of facsimile embossing stamp.

CONNECTING LINES.—The above rate and arrangement to be tendered to connecting lines for basing purposes. The sale of tickets or exchange orders to be so regulated as to require presentation at our gateways on the dates of sale authorized therefrom.

SPECIAL TRAINS.

LIST OF SPECIAL TRAINS FROM VARIOUS POINTS TO NEW ORLEANS.

CHICAGO.—The Chicago Medical Society is making arrangements with the Illinois Central to run a special train to New Orleans. The time of departure is expected to be about 12 o'clock noon, Sunday, May 3. The train will be a fully equipped and most comfortable one. Exact announcement will be made later. Those who find Chicago on their route to the session are invited to join this party. The train will also take on members from points along the line at which the train stops.

NEW YORK AND PHILADELPHIA.—A special train over the Southern Railway will leave New York City Saturday, May 2, at 4:25 p. m. and Philadelphia at 6:55 p. m. going to New Orleans, via Washington, Atlanta and Montgomery. The train will be composed exclusively of Pullman, dining, drawing room, sleeping, library and observation cars. Those desiring Pullman reservation should send in their names as soon as possible to Dr. F. H. Wiggin, 55 W. Thirty-sixth Street, New York City, or to agents of the Southern Railway.

Another train is planned over the New York and New Orleans Short Line. If enough do not reserve accommodation to warrant a special train, special cars will be used on a regular train, since many members have reserved berths. The majority of these will leave New York 3:25 p. m., Philadelphia 6:05 p. m. and Washington 10:01 p. m., May 2. The route is via Wash-

ington, Lynchburg, and Chattanooga. Further details and reservation of berths may be had from Eastern Passenger Agent L. J. Ellis, 398 Broadway, New York.

ST. LOUIS.—A special train will leave St. Louis via the Illinois Central, Sunday, May 3, at 2:44 p. m. This train will be made up of sections from Chicago, Omaha, Des Moines and perhaps other points and will consist of Pullman palace cars, diners and the other equipments of comfortable travel. Further information and reservation of berths from St. Louis may be obtained from C. C. McCarty, 308 N. Broadway, St. Louis.

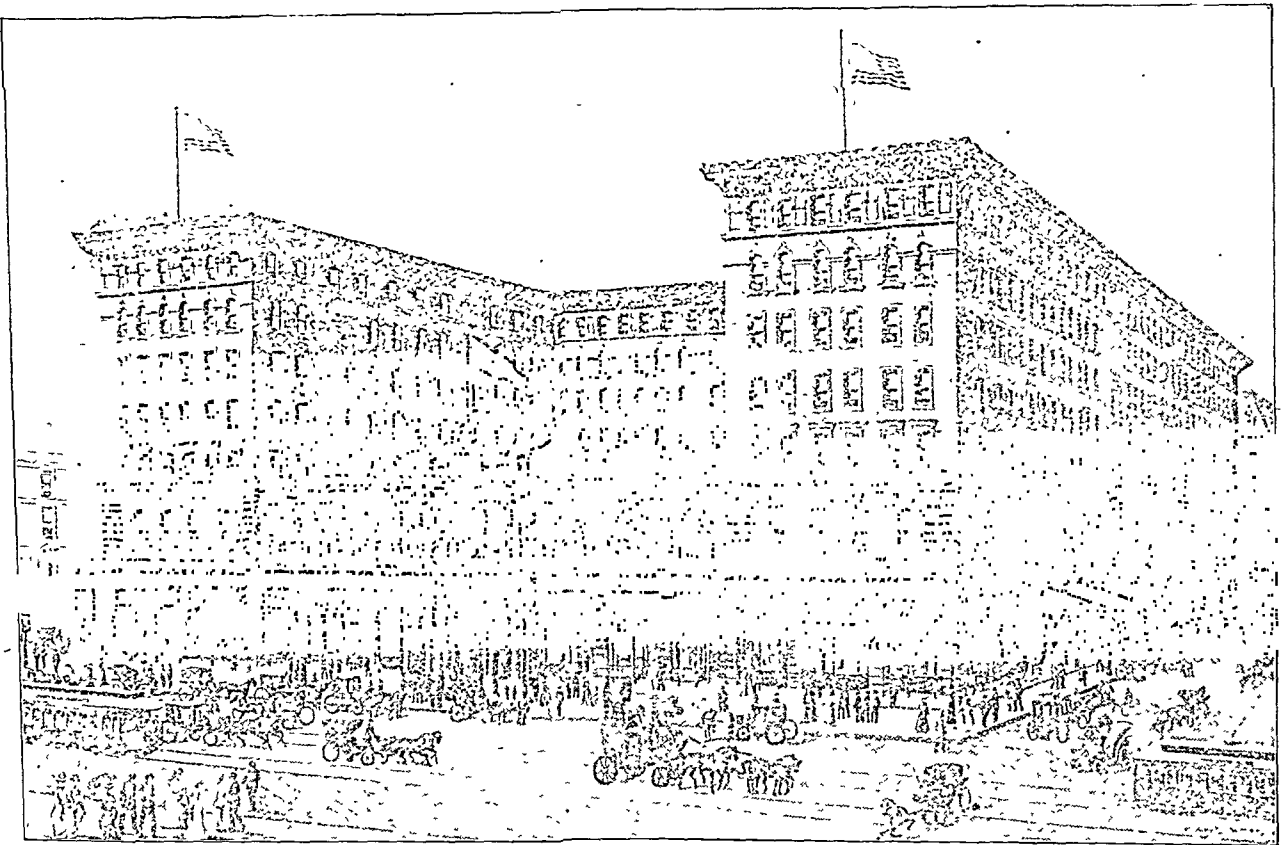
OMAHA.—The delegation from Omaha may obtain further information from Dr. W. H. Brill, Omaha.

ST. JOSEPH.—Those desiring to join the party from St. Joseph or vicinity should write Dr. Chas. Wood Fassett, St. Joseph, Mo.

DES MOINES.—Arrangements, as mentioned above, have been made for the Iowa contingent to travel together over the

to the Southeastern Limited of the 'Frisco system, leaving Kansas City Sunday, May 3, 6:30 p. m., via Memphis, 8 a. m. Monday, arriving in New Orleans Monday, May 4, at 7:40 p. m. Berths should be reserved early. Address Dr. J. V. Greene, 317 Rialto building, Kansas City, or reserve through agents of the 'Frisco System. The Omaha passenger agent is W. C. Melville, 205 S. 14th Street, Omaha. This route gives a daylight trip from Memphis to New Orleans.

LOUISVILLE.—Special Pullman service has been arranged to New Orleans, via the Illinois Central Railroad from Louisville, Ky., and vicinity. Special arrangements have been made for connections between parties from Cincinnati, Evansville and Indianapolis (via the Big Four route), and the party from Louisville at Fulton, from thence proceeding as one train on the Illinois Central. The special party will leave Louisville at 12:55 p. m., May 4, arriving in New Orleans at 11 o'clock the next morning, but those who desire to reach New Orleans at



The New St. Charles Hotel.

Wabash, leaving Des Moines Saturday evening, May 2, arriving in St. Louis Sunday morning, where they will join the other delegations and spend the morning in St. Louis. Further details may be had of Dr. J. W. Cokenower, Des Moines.

INDIANAPOLIS.—The Hoosier special via the Big Four and Illinois Central railways will leave Indianapolis for New Orleans, by way of St. Louis, at 3:25 p. m., Sunday, May 3. This train will arrive at New Orleans early next morning. Requests for reservations of berths may be sent to Dr. J. F. Barnhill, 144 N. Penn Avenue, Indianapolis. A large delegation from Indianapolis is already made up.

DETROIT.—A special train or else special cars on a regular train will run from Detroit to Cincinnati, where it will connect with the Q. and C. train mentioned in the next paragraph. Information may be had from Dr. A. P. Biddle, Detroit.

CINCINNATI.—The Queen and Crescent Route will carry a special party from Cincinnati to New Orleans. We have been sent no details of the Detroit and Cincinnati excursions.

KANSAS CITY.—A party is being made up of physicians from Kansas City, perhaps including Omaha, Lincoln, Sioux City and St. Joseph physicians, who will have special cars attached

an earlier date may do so, tickets being on sale from the last day of April at the reduced fare of one fare for the round trip. The advantages of making the trip in company with a congenial party are obvious, and it is hoped the delegates and members will join this party. Sleeper reservations can be made by addressing Dr. Henry Enos Tuley, 111 W. Kentucky Street, Louisville, Ky.

WATER ROUTES TO NEW ORLEANS.

ATLANTIC OCEAN TRIP DETAILS—NO MISSISSIPPI RIVER ARRANGEMENT.

The Southern Pacific line of passenger steamers (5,000 tonnage) between New York and New Orleans has made the rate of \$50 round trip or \$60 to go one way by rail and one way by water. Tickets will be good for three months, and this rate will apply to ships leaving New York April 18 and 25. The time in transit by water is about five days. The rates include room and board. The dates of return from New Orleans are May 6 and 13 at 9 a. m., and every seven days thereafter. This will be an opportunity for members to go by rail May 1 to 4, attend the meeting, take a trip to San Antonio, Texas, or some

other point and then sail for New York May 13. Further particulars may be had of L. H. Nutting, 340 Broadway, New York.

Another route to New Orleans, part land and part water route, is from Boston to Norfolk, Va., by steamer and thence to New Orleans by the Seaboard Air Line. The return will be by the same route. This round trip may be made for \$41.75, including meals and stateroom while on steamer. Particulars may be had of C. L. Longsdorf, 360 Washington street, Boston.

The Mississippi River route plan has not materialized. Dr. Otho F. Ball, St. Louis, investigated the matter and reports that the effort to form an excursion on the river had to be abandoned because there seemed to be no direct line of boats in operation. A party may go from some other point, however, if arrangements can be made. We have received a number of requests for information about this route. It is not too early for houseboat parties to float down the river. This method would prove a delightful method of recreation.

BAGGAGE AND HOTELS.

ANNOUNCEMENTS OF NEW ORLEANS BUREAU OF INFORMATION AND OF HOTEL COMMITTEE.

For the convenience of those in attendance at the New Orleans Session the Bureau of Information has arranged with the Parcel Delivery and Express Company to handle baggage. Messengers of this company will be on special trains, but not on regular trains entering New Orleans. Members and others who arrive on the regular trains may, if they wish, keep their checks until their arrival at the Bureau of Information, Washington Artillery Hall, and have their baggage transfer orders made from that point. This company will charge 25 cents for each piece delivered anywhere in the city. The charge of the other principal companies of the city is 50 and 75 cents per piece.

Employment Bureau.

The Bureau of Information's arrangement with New Orleans-Crescent Information and Employment Bureau places the resources of that organization at the service of visitors to New Orleans. Trained clerks, stenographers, bookkeepers and office assistants of every description, they say, will be furnished, baggage insured, river excursions arranged, information given as to Louisiana or other resorts, hotels, etc., and accommodations reserved thereat. We suggest that those desiring stenographers, etc., by having the same engaged in advance, will secure the best service.

Hotels and Boarding Houses.

All the rooms at the St. Charles Hotel have been reserved already. The Committee on Hotels has 5,000 rooms available in other hotels and boarding houses. They recommend that those who wish accommodations write for them in advance, addressing Dr. E. D. Martin, 810 Common street, New Orleans, and stating what sort of accommodations are desired, whether with meals or bath, how far from the meeting places, etc.

SECTION BANQUETS.

ELABORATE PLANS.—ANNOUNCEMENTS.—MENTION OF MISCELLANEOUS MATTERS.

The Section on Diseases of Children will have no Section banquet at New Orleans.

Five or more stereopticons have been provided for the use of different Sections at New Orleans.

The Section on Cutaneous Medicine and Surgery will have a smoker in lieu of a banquet Tuesday, May 5, 1903.

The Fête Champêtre in the City Park, with the elaborate decorations and illuminations and music, will be a grand event.

The National Conference of State Medical Examiners and Licensing Boards will meet on the morning of May 4, at 9:30.

The officers of the Section on Ophthalmology announce a fine program of toasts at their Section banquet, Tuesday evening.

The courtesy of Messrs. Hansell, Teunisson and Bellocq and Dr. J. A. Storek in furnishing some of the illustrations of New Orleans and vicinity is acknowledged.

Special attention is being given by the New Orleans committee to the matter of a river excursion. Other smaller excursions on Lake Ponchartrain have been arranged.

Dr. F. H. Wiggin, Secretary of the Judicial Council, desires us to announce that the Council will hold a meeting immediately after the adjournment of the first general meeting on Tuesday morning.

Unusual interest is being taken in special trains and in the arranging of parties to make the trip together. This is a delightful feature of each annual session, and members are this year planning to make the most of it.

The courtesies of the Boston Club and the Chess, Checkers and Whist Club have been extended to visiting members of the American Medical Association while in New Orleans. Membership badges will be all that is necessary to obtain admission.

The Section on Obstetrics and Diseases of Women will have a banquet Tuesday evening, to which members of the Association are invited. Plates will be \$3. Those desiring to attend the banquet should notify the secretary, Dr. C. S. Bonifield, Cincinnati, as soon as convenient.

Prof. W. Uthoff of Breslau, Germany, whose writings and work in ophthalmology are well known throughout the world, will be the guest of the Section on Ophthalmology. He is to take part in the work of the Section, and is expected to deliver a short address at the Section banquet.

The dedication of the Louisiana Purchase Exposition at St. Louis by President Roosevelt, April 30 to May 2, is conveniently on the path of many who go to New Orleans and affords an excuse for making St. Louis a rendezvous, from which the special trains should be well filled and a pleasant trip result.

The members of the Committee on Scientific Exhibit are making great efforts to have a creditable exhibit at this session. They announce that some features of the exhibit will be of especial interest and value to the general practitioner, while the specialists are taking much interest in their representations as well.

The officers of the Section on Laryngology and Otology desire that an announcement be made that anyone having anything to exhibit of special interest to laryngologists or to otologists, especially new instruments or apparatus, should communicate at once with the chairman, Dr. George L. Richards, Fall River, Mass., or with the secretary, Dr. J. F. Barnhill, Indianapolis.

The Chairman of the Section on Surgery announces his expectation of a very large attendance. Mikulicz of Breslau will be present and take part in the scientific work. Professor Krause of Berlin has been invited, but on last report it was feared he could not be present, owing to illness in his family, although it is probable that he may attend. Professor Moynihan of Leeds, England, is expected, but no final answer has at this time been received.

SCIENTIFIC EXHIBIT.

THE EXHIBIT OF PATHOLOGIC, PHYSIOLOGIC AND OTHER SPECIMENS AND APPARATUS.

The unavoidable delay incident to the organization of the Committee on Scientific Exhibit has been a serious drawback to the prosecution of the work. Many of those who contributed previously find it impossible this year owing to the limited time remaining. Remoteness of the place of meeting from sources of abundant material has also been urged as an excuse for not participating. There is, however, more than a saving remnant of those, recognizing the great practical value of the work, who are determined that the future of the movement shall not be jeopardized by any lapse at New Orleans. Such have come nobly to the rescue.

Although in the totals presented the showing may not equal that of the two previous meetings, the exhibit will be particularly interesting and instructive, because certain phases of pathology will be fully illuminated. An especial effort will be made to illustrate tropical diseases by means of gross anatomic as well as microscopic demonstrations. This will give to our southern colleagues an opportunity not so well afforded in the north. Such specialization is a natural evolution in the further conduct of the exhibit. Its scope and character will vary from year to year according to the place of meeting and the topics prominently considered in the sections. The committee has made strenuous endeavor to correlate the work of the exhibit with that of the Sections. Some of the officers have entered heartily into co-operation, with the result that we have been assured very complete groups of specimens illustrative of intestinal parasites, bacillary and amebic dysentery, malaria, yellow fever, surgical diseases of the kidney, ectopic pregnancy, fibroid tumors and other topics scheduled on the program.

It is hoped to have these groups demonstrated at stated hours indicated on the published program. In this way the exhibit will become educationally more efficient. The membership of the organization will thus be brought to realize that the exhibit belongs to the whole Association, and that it is not, as many are prone to suppose, merely an adjunct of the Section on Pathology and Physiology.

The local Committee of Arrangements has provided an ample hall for the exhibit, advantageously located and well lighted, in Washington Artillery Hall. Those who contemplate taking exhibits but have not yet made known the fact, should communicate at once with the chairman or nearest member of the committee.

Frank B. Wynn, Indianapolis, chairman; E. R. LeCount, Chicago; Harry T. Marshall, Baltimore; O. L. Pothier, New Orleans; Willard Bartlett, St. Louis, committee.

ASSOCIATION COMMITTEES.

The following list of committees and sub-committees and their officers and members is given here as of interest:

Committee on Award of Association Medal.—Lewis S. McMurtry, Louisville, Ky.; Burnside Foster, St. Paul; M. H. Fussell, Philadelphia.

Committee on Award of N. Senn Medal.—James H. Dunn, Minneapolis; M. L. Harris, Chicago; Floyd W. McRae, Atlanta, Ga.

Committee on Scientific Exhibit.—Frank B. Wynn, Indianapolis; E. R. LeCount, Chicago; Harry T. Marshall, Baltimore; O. L. Pothier, New Orleans; Willard Bartlett, St. Louis.

Committee on Scientific Research.—Alfred Stengel, Philadelphia; William Osler, Baltimore; L. Eektoen, Chicago.

Committee on Organization.—J. N. McCormack, Bowling Green; P. Maxwell Foshay, Cleveland, Ohio; George H. Simmons, Chicago.

Committee on Revision of Code of Ethics.—E. Elliot Harris, New York; William H. Welch, Baltimore; T. J. Happel, Nashville, Tenn.; Nicholas Senn, Chicago, and Joseph D. Bryant, New York.

Committee on Reciprocity.—W. L. Rodman, Philadelphia; William H. Welch, Baltimore; Joseph M. Mathews, Louisville, Ky.; Henry Beates, Jr., Philadelphia, and T. J. Murray, Butte, Mont.

Committee on Public Health.—Charles O. Probst, Columbus, Ohio; J. N. Hurty, Indianapolis; W. H. Sanders, Mobile, Ala.; H. A. West, Galveston, Tex., and W. C. Gorgas, U. S. A.

Committee on Medical Education.—Arthur D. Bevan, Chicago; F. W. McRae, Atlanta, Ga.; Rudolph Matas, New Orleans; R. A. Marmion, U. S. N., and C. A. Daugherty, South Bend, Ind.

Committee on Prophylaxis of Syphilis.—Henry D. Holton, Brattleboro, Vt.; George M. Kober, Washington, D. C.; W. H. Sanders, Mobile, Ala.; Ludwig Weiss, New York, secretary; L. D. Bulkley, New York, and Louis E. Schmidt, Chicago.

Committee on Credentials and Registration.—George H. Simmons, Chicago; P. Maxwell Foshay, Cleveland, Ohio, and H. O. Walker, Detroit.

Notice to the Members of the House of Delegates.

The members of the House of Delegates are requested to meet in New Orleans, Monday, May 4, at 2 p. m. This meeting will be informal and no official business can be transacted.

Its purpose is to consider unofficially the business which must be transacted by the House of Delegates and to consider the result of the work of the several committees.

It is believed that this informal meeting on Monday will so fully acquaint the delegates of the work to be done that one meeting each morning will be sufficient to accomplish all the business of the Association. Thus the delegates will be free to attend the afternoon scientific work of the Sections.

FRANK BILLINGS, President.

PRELIMINARY PROGRAMS

Of the Sections of the American Medical Association, New Orleans Session, May 5-8, 1903.

The following lists of papers to be read in the various Sections are preliminary, and the order given is not necessarily to be followed in the official program. The official program will not be ready for distribution till the session.

Write to the secretary of the Section in reference to these programs, and not to THE JOURNAL.

Section on Practice of Medicine.

Chairman, W. S. Thayer, Baltimore; Secretary, James B. McElroy, Stovall, Miss.

Chairman's Address, W. S. Thayer, Baltimore.

The So-called Spotted Fever of the Rocky Mountains, Louis B. Wilson and William Chowning, Minneapolis.

Continued Fever—Neither Malarial nor Typhoid; A Clinical Study, T. J. Happel, Trenton, Tenn.

Typhoid Fever, with Especial Reference to Therapeutic Fast-ing, R. M. Harbin, Rome, Ga.

Abdominal Pain in Pleurisy and Pneumonia, James B. Her-rick, Chicago.

Typhoid Fever at High Altitudes, with Résumé of 600 Cases, J. N. Hall, Denver.

The Diagnosis, Prognosis, and Treatment of Pneumonia, Edward F. Wells, Chicago.

The Boys' Venereal Peril, Ferd. C. Valentine, New York.

The Occurrence of Strongyloides Intestinalis in the United States, M. L. Price, Baltimore.

Uncinariasis in the United States, Allen J. Smith, Galveston, Texas.

Clinical Diagnosis of Intestinal Parasites, with Lantern Dem-onstration, Charles Wardell Stiles, Washington, D. C.

Treatment of Uncinariasis, Thomas A. Claytor, Washington, D. C.

A Contribution to the Study of Summer Diarrheas of Infancy, J. H. Mason Knox, Baltimore.

Malarial Dysentery, Wm. Britt Burns, Memphis, Tenn.

The Pathology and Clinical History of Amebic Dysentery, H. F. Harris, Atlanta, Ga.

A Study of the Cases of Amebic Dysentery Occurring at the Johns Hopkins Hospital, T. B. Fletcher, Baltimore.

Treatment of Acute Dysentery, Jas. M. Anders, Philadelphia.

The Circulatory Element in Acute Disease and Its Treatment, L. F. Bishop, New York.

Sources and Methods of Infection of Typhoid Fever, William H. Welch, Baltimore.

Prophylaxis of Typhoid Fever, J. S. Fulton, Baltimore.

Sources and Methods of Infection of Yellow Fever, James Carroll; U. S. A.

Prophylaxis of Yellow Fever, John Guiteras, Havana, Cuba.

Sources and Methods of Infection of Plague, W. S. Calvert, St. Louis.

Prophylaxis of Plague, Lewellys F. Barker, Chicago.

Arthritis Deformans, Thos. McCrae, Baltimore.

Diabetes Mellitus, Arthur R. Elliott, Chicago.

Heredity as an Etiologic Factor in the Production of Appen-dicitis, William H. DeWitt, Cincinnati.

Traumatic Pneumonia, William T. English, Pittsburg.

Historical Sketch of the So-called Consumption Cures, J. Edward Stubbert, New York.

Should the Tuberculous Patient Know His Condition? C. P. Ambler, Ashville, N. C.

Clinical Aspects of Tuberculous Peritonitis, Joseph Eichberg, Cincinnati.

Tuberculosis in the Negro, Seale Harris, Union Springs, Ala.

The Passing of Chronic Rheumatism, J. J. Walsh, New York.

Limitations of Non-Surgical Treatment in Obstruction of the Bowels, Joseph Rilus Eastman, Indianapolis.

Hemoglobinuric Fever: Its Etiology and Treatment, Walter Shropshire, Yoakum, Texas.

Southern Fevers, Wm. Krauss, Memphis, Tenn.

The Nature of Scurvy, Robert B. Preble, Chicago.

The Restorative Influence of Ozone on the Blood, G. Lenox Curtis, New York.

Section on Obstetrics and Diseases of Women.

Chairman, A. Palmer Dudley, New York; Secretary, C. L. Bonifield, 432 W. 4th Street, Cincinnati.

Chairman's Address, A. Palmer Dudley.

The Advisability of Vaginal Explorative Puncture and and Celiotomy in Cases of Doubtful Diagnosis in Diseases of the Female Genital Organs, with a Report of Three Instructive Cases: (A) Round Cell Sarcoma of Ovary; (B) Infected Retrouterine Hematocele; (C) Pelvic Abscess and Pyosalpinx, C. O. Thienhaus, Milwaukee, Wis.

The Exclusive Use of Electrothermic Hemostasis in Abdominal Surgery, J. W. Keefe, Providence, R. I.

Non-Absorbent Gauze: The Proper Material for Tamponades for Hemorrhage, with Special Reference to Obstetrics, Rudolph W. Holmes, Chicago.

The Technic of Cataphoric Sterilization in Cancer of the Cervix Uteri, G. B. Massey, Philadelphia.

The Repair of Cystocele by Utilization of the Anatomically-Fixed Points in the Anterior Vaginal Wall, E. Reynolds, Boston.

Laceration of the Cervix; When Shall They Be Repaired? Daniel H. Craig, Boston.

A Further Report on Operations on the Uterosacral and Round Ligaments for Retroversion of the Uterus, J. Wesley Boyce, Washington, D. C.

Retroversion of the Uterus; A Clinical Study of the Symptoms, Complications and Treatment, L. H. Dunning, Indianapolis.

Pathologic Exhibit, one hour.

Gastric Ulcer: Some Clinical, Pathologic and Surgical Phases, A. H. Cordier, Kansas City, Mo.

Appendectomy from the Standpoint of the Gynecologist, H. P. Newman, Chicago.

Relation of Appendicitis to Pelvic Disease, F. H. Wiggin, New York.

A Consideration of the Various Methods of Hysterectomy for Myomata, Thos. B. Eastman, Indianapolis.

Sarcomatous Degeneration of Myomata, T. S. Cullen, Baltimore.

Calcification of Uterine Myoma; An Unusual Case, W. H. Huniston, Cleveland.

Ectopic Gestation: Inhibited Tubal Peristalsis a Cause; Report of a Case, with Remarks, O. G. Pfaff, Indianapolis.

The Vaginal Incision in Septic Cases of Abortion, Hunter Robb, Cleveland.

Acute General Staphylococcus Infection Through the Puerperal Breast, W. R. Manton, Detroit.

Shall We Remove the Uterus When It Is Necessary to Remove Double Pus Tubes? C. C. Frederick, Buffalo.

Improved Technic of the Author's Operation for Suprapubic Colohysterectomy for Carcinoma of Cervix, X. O. Werder, Pittsburg.

Transplantation of the Ovaries, F. H. Martin, Chicago.

Typhoid Perforation, W. D. Haggard, Nashville.

Fixation of the Prolapsed Kidney, A. H. Goelet, New York.

Infected Gall Bladder Contents with or without Gallstones, E. W. Ricketts, Cincinnati.

A Combined Clinical and Experimental Study Concerning Peritoneal Saline Infusion, J. C. Clark, Sykesville, Md.

The Early Recognition of Impending Obstetric Accidents, J. B. De Lee, Chicago.

Operations on Diabetics, C. P. Noble, Philadelphia.

The Hygiene of Young Girls, J. H. Carstens, Detroit.

Section on Surgery and Anatomy.

Chairman, James E. Moore, Minneapolis; Secretary, John C. Munro, 173 Beacon Street, Boston.

Time limit of papers, 15 minutes; time limit of discussions, 5 minutes.

If an essayist is not present when his name is called his paper goes to the end of the session's program.

Each paper must be delivered to the secretary immediately after being read.

Sessions will commence promptly at 9:30 a. m. and 2 p. m.

Chairman's Address, James E. Moore, Minneapolis.

Suppression of Urine; Report of a Case Enduring Five Days, Relieved by Decapsulation of the Kidneys, H. J. Whitacre, Cincinnati.

Fat Necrosis of the Kidney, J. R. Guthrie, Dubuque, Iowa.

Indications and Technic of Nephrectomy, Ramon Guiteras, New York.

The Surgical Treatment of Nephritis, A. H. Ferguson, Chicago.

Indications for Cholecystectomy, B. B. Davis, Omaha.

Cholecystectomy versus Cholecystorrhaphy and Cholecystostomy, F. D. Smythe, Memphis, Tenn.

The Call for Exploratory Operation in the Gall Bladder Region, F. A. Dunsinor, Minneapolis.

A Contribution to the Surgery of Gastric Ulcer, Van Buren Knott, Sioux City, Iowa.

Surgical Conception of Pyloric Obstruction, H. D. Niles, Salt Lake City.

Surgical Treatment of Gastric Tetany and Gastroparesis, Robert F. Weir, New York.

The Single Cuff Method of Circular Enterorrhaphy: A New Method, O. Beverly Campbell, St. Joseph, Mo.

Intestinal Resection with Report of Fifteen Cases, Nine with the Button and Six with Suture, James H. Dunn, Minneapolis.

Osteomyelitis, Edward H. Nichols, Boston.

Multiple Osteomyelitis, John T. Bottomley, Boston.

The Physiologic Principles Underlying Operations on the Head and Neck, G. W. Crile, Cleveland, Ohio.

Treatment of Vascular Tumors by the Injection of Boiling Water, John A. Wyeth, New York.

Further Experience with the Vertical Overlapping Method for the Radical Cure of Umbilical Hernia, Wm. J. Mayo, Rochester, Minn.

Evolution of the Mammalian Straight Gut, with Special Reference to Peritoneal Changes Incident to Rotation: Illustrated by Dissections and Mechanical Devices, W. T. Eckley, Chicago.

The Value of Enterostomy in Selected Cases of Peritonitis, Fred B. Lund, Boston.

Clinical Observations in Stomach Surgery, A. J. Oschner, Chicago.

Post-Operative Treatment of Gangrenous Appendicitis, Ernest Laplace, Philadelphia.

Dangers Attendant on Attempt at Gaining the Period of Interval in Operation for Appendicitis, Richard H. Gibbons, Scranton, Pa.

The Treatment of Fractures as Indicated by the Roentgen Rays, Carl Beck, New York.

Sunshine and Fresh Air versus Roentgen and Finsen Rays in the Treatment of Tuberculosis of Bones and Joints, De Forest Willard, Philadelphia.

Epithelioma Under the X-Ray; A Preliminary Report of the Histologic Changes, J. Clark Stewart, Minneapolis.

Contributions to the Therapy of Surgical and Other Diseases with X-Rays, Rudolph Matas, New Orleans.

The Surgical Treatment of Ascites due to Cirrhosis of the Liver, M. L. Harris, Chicago.

Varix of the Inferior Mesenteric Vein Complicated by Chronic Ulcerative Colitis; Operation, John E. Summers, Jr., Omaha.

Congenital Dislocation of the Radius, Charles A. Powers, Denver.

Acute Epiphysitis of the Head of the Femur, Causing a Condition Subsequently Simulating Congenital Misplacement, John P. Lord, Omaha.

Necessity for more Care in the Treatment of Skull Fractures, W. H. Earles, Milwaukee, Wis.

Epispadias: Report of a Case Treated by a Modification of Caulwell's Operation, James B. Bullitt, Louisville, Ky.

Diverticulum of the Esophagus, A. E. Halstead, Chicago.

Cicatricial Ankylosis of the Jaws; a Contribution to Its Operative Treatment, Rudolph Matas, New Orleans.

Further Contribution to the Surgery of Undescended Testicle, Arthur Dean Bevan, Chicago.

Surgery of the Urinary Tract in the Female, Experimental and Clinical, J. B. Murphy, Chicago.

Consideration of Mammary Cysts in the Early Diagnosis of Breast Tumors, Robert Abbe, New York.

Tuberculosis of the Mammary Gland, A. H. Levings, Milwaukee, Wis.

The Closure of Wounds, Miles F. Porter, Fort Wayne, Ind.

Operative Treatment of Exophthalmic Goiter, T. C. Wither-
spoon, St. Louis.

Subcutaneous Injections of Paraffin for Deformities of the Nose, F. G. Connell, Leadville, Colo.

Abscess of the Spleen, Walter M. Spear, Rockland, Me.

Stricture of the Esophagus Following Typhoid Fever, Illustrated by Three Cases, James E. Thompson, Galveston, Texas.

A Case of Gas Bacillus Infection, Joseph Ransohoff, Cincinnati.

Section on Hygiene and Sanitary Science.

Chairman, H. M. Bracken, Minneapolis; Secretary, G. L. Swarts, Providence, R. I.

Address of Chairman.

Co-operation Methods for Improving the Usefulness of Statistical Classification of Causes of Death, Cressy L. Wilbur, Lansing, Mich.

Relation of Physicians to Correct Registration of Vital Statistics, W. A. King, Washington, D. C.

Present Status of the Filtration of Water, George W. Fuller, New York.

Drainage, Sewerage and Water Supply of New Orleans, Geo. G. Earl, New Orleans.

Leprosy from a Sanitary Standpoint, Isadore Dyer, New Orleans.

Tent Life in the Treatment of Pulmonary Tuberculosis, R. W. Craig, Phoenix, Ariz.

Where Under Our Form of Government Do Public Health Powers Reside and How Should They Be Exercised? W. H. Saunders, Montgomery, Ala.

The Future of Preventive Medicine, H. A. Moody, Mobile, Ala.

Thursday Morning and Afternoon, Joins Session with the Section on Practice of Medicine.

Discussion of the Manner of Infection and Prophylaxis of Typhoid Fever:

On the Source and Manner of Typhoid Fever, Wm. H. Welch, Baltimore.

Prophylaxis, John S. Fulton, Baltimore.

Discussion, John H. Musser, Philadelphia.

Discussion on the Manner of Infection and Prophylaxis of Yellow Fever:

Sources and Manner of Infection, James Carroll, U. S. A.

Prophylaxis, John Guiteras, Havana, Cuba.

Discussion, Stanford E. Chaille, New Orleans.

Discussion on the Manner of Infection and Prophylaxis of Plague:

Sources and Manner of Infection, W. J. Calvert, St. Louis.

Prophylaxis, Lewellys F. Barker, Chicago.

Discussion, F. G. Novy, Ann Arbor.

Section on Ophthalmology.

Chairman, John E. Weeks, New York; Secretary, Frank C. Todd, Minneapolis.

Address of the Chairman.

Vernal Conjunctivitis, Wm. Campbell Posey, Philadelphia.

Subtropical Trachoma, with Special Reference to a New Therapeutic Agent, Rufin A. Wright, Mobile, Ala.

The Treatment of Trachoma, Edgar Doak Capps, Fort Worth, Texas.

The Action of Adrenalin in Acute Conjunctival Inflammation, Louis J. Lautenbach, Philadelphia.

Experimental Study on Some Methods of Combating Post-Operative Infection of the Anterior Segment of the Globe, E. C. Ellett, Memphis, Tenn.

Ocular Complications of Bright's Disease, Louis Stricker, Cincinnati.

Subconjunctival Medication with an Especial Reference to the Use of Salt-Sugar Solution in Acute Affections of the Anterior Portions of the Eye, Howard M. Morton, Minneapolis.

Albuminuric Retinitis and the Decapsulation of the Kidney, George F. Suker, Chicago.

SYMPOSIUM ON THE INFLUENCE OF THE CERVICAL SYMPATHETIC ON THE EYE.

(A) Experimental Researches Regarding the Influence of the Cervical Sympathetic on the Eye, Geo. E. de Schweinitz, Philadelphia.

(B) The Influence of Resection of the Superior Ganglion of the Cervical Sympathetic in Glaucoma, Wm. H. Wilder, Chicago.

(C) Influence of Resection of the Cervical Sympathetic in Optic Nerve Atrophy, Hydrophthalmus and Exophthalmic Goiter, James Moores Ball, St. Louis.

(D) Pathology of the Cervical Sympathetic, John E. Weeks, New York.

Arteriosclerosis (Endarteritis) and Its Bearing on Retinal and Choroidal Lesions, Chas. Stedman Bull, New York.

Study of the Nerve Head in Relation to Certain Other Fundus Anomalies, Chas. H. Beard, Chicago.

Retinal Disease Limited to the Region of the Macula Lutea, Henry Gradle, Chicago.

Address: Congenital Total Color Blindness, Based on a Study of Nine Cases, Prof. Wm. Unthoff, Breslau, Germany.

Pathologic Exhibit, prepared by a committee consisting of Casey A. Wood, Chicago; Edward A. Shumway, Philadelphia, and H. V. Würdemann, Milwaukee, Wis.

Report of committee:

Methods of Preparing and Preserving Ophthalmic Specimens for the Museum. Address by Chairman, Casey A. Wood.

Some Points in the Pathology of the Eye. Illustrated by the Present Exhibit of Morbid Growths, Edward A. Shumway.

SYMPOSIUM ON THE BACTERIOLOGY OF THE EYE.

Bacteriologic Exhibit, prepared by a committee consisting of R. L. Randolph, Baltimore; Brown Pusey, Chicago; and Edgar Thompson, New York.

(1) The Bacteria Concerned in the Production of Eye Inflammations; address by Chairman, Robert L. Randolph.

(2) Bacteria in the Conjunctiva, Cornea, Iris, Ciliary Body and Choroid, and Changes Caused Thereby. (Illustrated by projection with a lantern of sections and lantern slides.) Brown Pusey, Chicago.

(3) The Essentials and Unessentials of Ophthalmic Asepsis, Harold Gifford, Omaha.

Development of the Fusion Center in the Treatment of Strabismus, Nelson M. Black, Milwaukee, Wis.

A Set of Charts for Stereoscope To Be Used for an Amblyopic Eye or for Treatment of Squint, Albert B. Hale, Chicago.

Cramp of the Ciliary Muscle Due to Eye-strain, J. W. Wright, Columbus, O.

Skiascopy as a Method of Precision, Edward Jackson, Denver.

Some Observations on the Eye Complications of Smallpox During the Recent Epidemic in Cleveland, A. R. Baker, Cleveland, O.

Some Rare Corneal Complications in Ophthalmia Neonatorum, A. A. Hubbell, Buffalo, N. Y.

Skin Grafting on the Eyelids, Oscar Dodd, Chicago.

Entropion and the Operations Employed for Its Relief, John O. McReynolds, Dallas, Texas.

Sympathetic Ophthalmia as the Result of Trauma in the Ciliary Region, John Sabert Mott, Kansas City, Mo.

A Case of Syphilitic Orbital Periostitis and Optic Neuritis, in which Vision Was Nearly Extinguished But Fully Restored, F. C. Hotz, Chicago.

Traumatic Lesions of the Ocular Adnexa; with Report of a Case of Contused Wound of the Eyebrow Resulting in Complete Monocular Blindness Unaccompanied by Ophthalmoscopic Changes, Ellet O. Sisson, Keokuk, Iowa.

Exhibition of Specimens and New Instruments.

Extraction of the Crystalline Lens in High Myopia, H. V. Würdemann and Nelson M. Black, Milwaukee, Wis.

The Management of Myopia, J. H. Claiborne, Jr., New York.

Suggestions on the Pathogenesis of Glaucoma, N. J. Hepburn, New York.

Report of a Case of Complete Absence of Both Eyeballs at Birth, Lawrence R. Ryan, Galesburg, Ill.

Calcareous Degeneration of Corneal Cicatrices, H. Moulton, Fort Smith, Ark.

Ocular Incoördination and Cerebral Reflexes, F. Park Lewis, Buffalo, N. Y.

The Voluntary and Involuntary Brain Centers Controlling the Ocular Muscles, G. C. Savage, Nashville, Tenn.

Remarks on the Horopter, Geo. T. Stevens, New York.

Our Present Knowledge of the Cerebral Centers of the Eye, C. Barck, St. Louis.

Section on Diseases of Children.

Chairman, John C. Cook, Chicago; Secretary, Thos. S. Southworth, New York.

Address of Chairman.

Anatomic and Physiologic Correspondence of Child and Adult, William T. Eckley, Chicago.

The Treatment of Scarlet Fever; Its Complications and Sequelæ, H. M. McClanahan, Omaha.

Acute Fatty Degeneration, Probably Phosphorus Poisoning, in an Infant One Year Old, Isaac A. Abt, Chicago.

Hydronephrosis in a Child Four Years Old, with Operation and Recovery, S. W. Kelley, Cleveland, Ohio.

Acute Suppurative Cervical Adenitis of Infancy, Thos. S. Southworth, New York.

Rheumatism of the Appendix in Childhood, Frank X. Walls, Chicago.

Some Considerations in the Treatment of Broncho Pneumonia in Children, William Edgar Darnall, Atlantic City, N. J.

Belladonna in the Broncho-Pneumonias of Children, D. A. Hodghead, San Francisco.

Observations on Breast Feeding From an Obstetrician's Point of View, with Report of Cases, Elfa V. Davis, Chicago.

Retained Intubation Tubes, with a Method of Treatment of the Larynx, Leading to Their Final Extraction, B. R. Shurly, Detroit.

The Infant Digestive Disturbances, A. C. Cotton, Chicago.

Observations on Prolonged Withdrawal of all Food in the Management of Certain Cases of Intestinal Disorders, Thomas D. Parks, Birmingham, Ala.

Infant Feeding; Its Relation to the Diarrheal Diseases of Infancy, J. G. Mastin, Chicago.

Case of Probable Gumma of the Liver in a Child of Six, J. P. Crozer Griffith, Philadelphia.

Every-day Problems in Infant Feeding, Henry Enos Tuley, Louisville, Ky.

The Special Value of Adrenalin in Acute Inflammations of the Mucous Membranes of Children, Louis J. Lautenbach, Philadelphia.

The Causes of High Mortality Among Infants in Institutions, with Considerations on Its Possible Reduction, Charles O'Donovan, Baltimore.

Otitis Media in Infancy, John Lovett Morse, Boston.

Capillary Bronchitis, Philip F. Barbour, Louisville, Ky.

Is the Study of Pediatrics Worth the Attention It Gets, and Does It Get the Attention It Deserves? C. F. Wahrer, Fort Madison, Iowa.

The Modern Treatment of Diphtheria, Louis Fischer, New York.

The Inherent Reaction of the Organism in the Diarrheas of Childhood, John Madison Taylor, Philadelphia.

Chorea, W. C. Hollopeter, Philadelphia.

Fresh Air in the Treatment of Children's Diseases, Robert W. Hastings, Boston.

Infant Feeding, Alex. McAlister, Camden, N. J.

Management of Catarrhal Pneumonia in Infants and Young Children, Charles G. Kerley, New York.

Grip in Children, William C. Williams, Chicago.

The Feeding of Healthy Infants, Charles Douglas, Detroit.

The Safranin Reaction in the Urine of Children, W. S. Christopher, Chicago.

Some Suggestions in the Therapy of Infancy, E. W. Saunders, St. Louis.

Aphthæ and Herpes Contracted by Children Drinking Milk from Cows Suffering from Foot and Mouth Diseases, E. F. Brush, Mount Vernon, N. Y.

Suggestions for Reducing the Prevalence of Summer Diarrhea, J. Ross Snyder, Birmingham, Ala.

The Pathology of Summer Diarrheas of Children, G. W. Boot, Evanston, Ill.

Section on Stomatology.

Chairman, M. L. Rhein, New York; Secretary, Eugene S. Talbot, 103 State Street, Chicago.

Chairman's Address, M. L. Rhein, New York.

SYMPOSIUM ON DENTAL PULP.

Notes on Pulp Technic, Martha Anderson, Moline, Ill.

Minute Structures of the Dental Pulp, Vida A. Latham, Chicago.

The Vasomotor System, Eugene S. Talbot, Chicago.

The Dental Pulp Viewed Without the Microscope, T. E. Constant, Scarborough, York, England.

The Development of Hard Tissue in the Pulp, D. E. Causch, Brighton, England.

Some Histologic Facts Contradictory to the Theory of Odontoblasts, Michael Morganstein, Strassburg, Germany.

Pulp Hypertrophy of the Teeth, Oskar Romer, Strassburg, Germany.

Tolerance of Tissues for Foreign Bodies, with Special Reference to the Pulp and Peridental Membrane, M. H. Fletcher, Cincinnati.

Professional Responsibilities, A. E. Baldwin, Chicago.

The Dental Symptoms of Diabetes Mellitus, Hermann Prinz, St. Louis.

Germicides, A. H. Peck, Chicago.

A System for the Correction of Hare-lip and Cleft Palate, G. V. I. Brown, Milwaukee, Wis.

Is the Accomplishment of Reasonable Ideals in Dental Education Near at Hand, Chas. Chittenden, Madison, Wis.

The Influence of Local and General Disturbances on the Oral Secretions, Geo. F. Eames, Boston.

The Dentist in the U. S. Navy, Richard Grady, Baltimore.

Methods of Controlling Hemorrhage of the Oral Cavity, H. E. Belden, New Orleans.

Empyema of the Maxillary Sinus, O. N. Heise, Cincinnati.

Medical and Dental Libraries, Alice M. Steeves, Boston.

Orthodontic Facial Orthopedics, W. E. Walker, New Orleans.

A paper is also to be read by J. Choquet, Paris, France.

Section on Nervous and Mental Diseases.

Chairman, F. W. Langdon, Cincinnati; Secretary, F. Savary Pearce, 1407 Locust Street, Philadelphia.

Address of Chairman, F. W. Langdon, Cincinnati.

Some Graphic Observations on Ankle-Clonus, A. A. Eshner, Philadelphia.

Penetrating Wound of Both Cerebral Hemispheres, with Recovery, W. S. Lindsay, Topeka, Kan.

Trend of Modern Psychiatry and Its Relation to General Medicine, John Punton, Kansas City, Mo. Discussion opened by F. Savary Pearce, Philadelphia.

A Contribution to the Study of Visual Disturbances in Brain Injury, William E. Gamble, Chicago.

Epilepsy; A Clinical Study, J. G. Biller, Cherokee, Iowa.

Pathology of Inebriety, T. D. Crothers, Hartford, Conn.

Ambulatory Automatism, Hugh T. Patrick, Chicago.

Relation of Epilepsy to Chronic Gastro-Intestinal Diseases, G. W. McCaskey, Fort Wayne, Ind.

The Use of the Ultra-Violet Ray in the Treatment of Functional and Organic Nervous Diseases, Albert E. Sterne, Indianapolis.

SYMPOSIUM ON RELATION OF PUBLIC SCHOOL METHODS TO PSYCHOSES.

Causes, Predisposing and Exciting, Herman H. Hoppe, Cincinnati.

Relation of the Public School to the Seminary and College as to Psychoses, F. Savary Pearce, Philadelphia.

Best Methods of Counteracting Psychoses Due to Strain and Stress, William J. Herdman, Ann Arbor, Mich.

Discussion to be opened by (1) H. N. Moyer, (2) John Punton, (3) F. W. Langdon.

Therapy of Insanity, Orpheus Everts, Cincinnati.

A Consideration of the Neuroses of Status Lymphaticus, A. P. Ohlmacher, Gallipolis, Ohio.

Some Unusual Cases of Paralysis Agitans, Philip Zenner, Cincinnati.

Report of Two Cases of Cerebral Hematoma, H. A. Tomlinson, St. Peter, Minn.

The Nervous Phenomena Associated with Movable Kidney, Wharton Sinkler, Philadelphia.

Relation Between Neurasthenia and General Paresis, E. D. Bondurant, Mobile, Ala.

Atrophy of Hand Muscles with Localized Sensory Disturbances; Possibly Early Syringomyelia, D. I. Wolfstein, Cincinnati.

Carcinoma of Spine and Meninges Secondary to Cancer of the Breast, F. Savary Pearce and A. C. Buckley, Philadelphia.

Ten Cases of Chronic Morphinism and Results of Treatment, A. J. Pressey, Cleveland, Ohio.

Some Toxemias in Relation to the Production of Nervous and Mental Disease, Samuel Bell, Detroit.

Treatment of Nervous and Mental Diseases of Toxic Origin, F. P. Norbury, Jacksonville, Ill.

Tabes in the Negro, D'Orsay Hecht, Chicago.

Treatment of Emotional Disturbances, Howell T. Pershing, Denver.

Climatology, etc., of the Insane, John W. Robertson, Alameda, Cal.

Section on Cutaneous Medicine and Surgery.

Chairman, John A. Fordyce, New York; Secretary, R. R. Campbell, 204 Dearborn Street, Chicago.

The Modern Conception of Eczema, John A. Fordyce, New York.

Larva Migrans, Henry W. Stelwagon, Philadelphia.

The Influence of the Menstrual Function on Certain Diseases of the Skin, L. Duncan Bulkley, New York.

Results in Radiotherapeutics and Clinical Conclusions, Dr. H. R. Varney, Detroit.

Fibroma Molluscum, Henry G. Anthony, Chicago.

Diagnosis of Cutaneous Syphilis, Isadore Dyer, New Orleans.

Treatment of Syphilis by Injections, M. L. Heldingsfeld, Cincinnati.

Syphilitic Fever, Eugene Carson Hay, Hot Springs, Ark.

Papilloma of the Sole, Douglass W. Montgomery, San Francisco.

Diagnosis of Smallpox, A. W. Brayton, Indianapolis.

Morbid Anatomy and Treatment of Smallpox, N. D. Brayton, Indianapolis.

Some Clinical Observations on Chickenpox, Jay F. Schamberg, Philadelphia.

Pityriasis Rosea, L. Weiss, New York.

Report of a Case of Pemphigus Chronicus, William Frick, Kansas City.

Tuberculosis Cutis Frambesioides, William S. Gottheil, New York.

Two Cases of Pemphigus Foliateous, David Lieberthal, Chicago.

The Bacillus of Syphilis, Justin de Lisle, New York.

The Treatment of Leprosy, A. H. Ohmann-Dumesnil, St. Louis.

Atrophia Cutis Idiopathica; A Study of Two Cases, W. S. Gottheil, New York.

Notes on the Treatment of Lichen Planus, Joseph Zeisler, Chicago.

Clinical Results Obtained in the Use of Finsen's and Other Lights, L. E. Schmidt, Chicago.

Notes of An Interesting Case of Lupus Vulgaris, R. R. Campbell, Chicago.

The Consideration of Scarlet Fever, William L. Baum, Chicago.

Differential Diagnosis of Pemphigus and Dermatitis Herpetiformis, L. Blake Baldwin, Chicago.

Thursday morning, May 7, will be devoted to clinical demonstrations or rare skin diseases, with presentation of cases at Charity Hospital.

Section on Laryngology and Otology.

Chairman, Geo. L. Richards, Fall River Mass. Secretary, J. F. Barnhill, Indianapolis.

Address of Chairman.

Report of Cases Showing Instrument and Technic in the Cure of Deaf-Mutism, Maury M. Stapler, Macon, Ga.

The Treatment of Chronic Otitis Media, A. T. Mitchell, Vicksburg, Miss.

The Necessity of an Early Diagnosis and Treatment in Acute Suppurative Affections of the Middle-Ear, Frank D. Boyd, Fort Worth, Texas.

Nasal Polypus; Origin and Treatment, Chas. H. Baker, Bay City, Mich.

Diphtheria of the Nose, W. Scheppegegrell, New Orleans.

Membranous Pharyngitis, John McReynolds, Dallas, Texas.

Report of a Case of Empyema of the Frontal Sinus, C. A. Thigpen, Montgomery, Ala.

Some Reasons for Past Unsatisfactory Results in the Treatment of Chronic Empyema of the Maxillary Sinus, Redmond Payne, San Francisco.

Malignant Diseases of the Nasal Passages, Francis J. Quinlan, New York.

Paraffin Injected Subcutaneously for the Correction of Nasal and Other Deformities, Harmon Smith, New York.

Paraffin in Nasal Deformities, P. J. H. Farrell, Chicago.

Some Observations on the Removal of Diseased Tonsils, Charles M. Robertson, Chicago.

(Note: Dr. Robertson will give a clinical demonstration of his method of removal of tonsils.)

The Special Influence of the High Altitude on the Nose and Throat, S. E. Solly, Colorado Springs.

A General Consideration of the Diseases of the Ethmoid Bones and Cells, Robert C. Myles, New York.

Non-Tubercular Hemorrhages of the Air-Passages, L. F. Page, Indianapolis.

The Resection Operation for the Correction of Deflections of the Nasal Septum, Otto T. Freer, Chicago.

How Far Should the Specialist in Rhinology and Otology Presume to Treat the Systemic Condition? C. M. Cobb, Lynn, Mass.

Non-Operable Catarrh, Fayette C. Ewing, St. Louis.

Exhibition of Author's Electro-Motor Nasal Saw, with Remarks, Melville Black, Denver.

Report of Three Cases: Case of Prolonged Intubation, Peculiar Symptoms Following Middle-Ear Operation and Case of Esophageal Obstruction Due to an Upper Alveolar Plate, Geo. F. Cott, Buffalo, N. Y.

The Early Manifestations of Laryngeal Tuberculosis: Their Recognition and Treatment, H. H. Briggs, Asheville, N. C.

The Teaching of Otology to the Undergraduate Medical Student, B. Alex. Randall, Philadelphia.

Auscultation of the Mastoid Process, A. H. Andrews, Chicago.

Proof of the Efficacy of Treatment by Aseptic Drainage in Acute Suppurative Otitis, H. Gradle, Chicago.

The Present Status of Ossiculectomy, J. A. Stucky, Lexington, Ky.

Treatment of the Eustachian Tube, Geo. B. McAuliffe, New York.

Some Recent Experiences with Chronic Suppurations of the Ear, Philip Hammond, Boston.

The Distribution of Blood Vessels in the Labyrinth of the Ear, with Exhibition of Preparation and Drawing, and (b) Wood's Metal Casts of the Middle-Ear with the Exhibition of Preparation and Lantern Demonstration, Geo. E. Shambaugh, Chicago.

Perisinus Abscess of Lateral Sinus with Metastasis in Liver and Sterno-Clavicular Arthritis, Gordon King, New Orleans.

Otitis Media Catarrhalis Chronica, S. McCuen Smith, Philadelphia.

Mastoid Diseases and Meningitis, Seymour Oppenheimer, New York.

The Immediate Relief of Hysterical Manifestations in the Larynx by Suggestion, H. W. Loeb, St. Louis.

The Great Value of Drainage and Ice in the Early Stages of Mastoiditis, Sargent F. Snow, Syracuse, N. Y.

Deformity of the Nasal Septum in Atrophic Rhinitis: Shall We Operate? Kate W. Baldwin, Philadelphia.

Note: The pathologic and anatomic exhibit of specimens pertaining to the work of this Section, and new instruments will be continued. Members are requested to bring with them any unusual or interesting specimens or instrument. An interesting collection is already promised.

J. F. BARNHILL, Secretary.

Section on Materia Medica, Pharmacy and Therapeutics.

Chairman, Solomon Solis-Cohen, Philadelphia; Secretary, C.-S. N. Hallberg, 358 Dearborn Street, Chicago.

Address of Chairman.

Report of Committees on Papers presented at the last annual session:

On Dosage of Liquid Medicines, Frank Woodbury, H. C. Wood, Jr., and A. A. Eshner.

On Nerve Nostrums and Drug Addiction, A. W. Baer, W. J. Robinson and H. C. Wood, Jr.

Is Pharmacologic Action Determined by Chemical Structure or by Physical Characters? Arthur R. Cushney, Ann Arbor, Mich.

Research Problems of Pharmacology, Torald Sollmann, Cleveland, O.

The Physiologic Effects of the Ions, Ralph N. Webster, Chicago.

The Chemistry of Ergot, Albert B. Lyons, Detroit.

Mercury, Laura House Branson, Iowa City, Iowa.

The Absorption of Iron from the Alimentary Canal, Winfield S. Hall, Chicago.

Drugs Used in Nervous Diseases, George F. Butler, Alma, Mich.

The Mind as a Causative and Therapeutic Factor in Medicine, Bittle C. Keister, Roanoke, Va.

Limitations of the Dietetic Treatment of Diabetes, Arthur R. Elliott, Chicago.

Intestinal Antiseptics, Their Uses and Limitations, J. A. Storek, New Orleans, La.

Remedies for the Relief of Dropsy, Egbert LeFevre, New York, N. Y.

Demonstrated Pathologic Effects of Alcohol, T. D. Crothers, Hartford, Conn.

The Legitimate Therapeutic Uses of Alcohol, O. T. Osborne, New Haven, Conn.

The Management of Fever in General, Augustus A. Eshner, Philadelphia.

The Usefulness and Limitations of Drugs on Pyretic Conditions, Robert Reyburn, Washington, D. C.

The Therapeutic Value of Spinal Puncture for the Cerebral Symptoms of Typhoid Fever, J. H. Musser, Philadelphia.

The Limitations and Use of Aconite and Veratrum Viride, Warren B. Hill, Milwaukee, Wis.

Venesection: Its Use and Abuse, C. F. Wahrer, Fort Madison, Iowa.

Exercise as a Mode of Treatment of Heart Diseases, N. S. Davis, Jr., Chicago.

The Control of Hemorrhage by Drugs, with Particular Reference to Gelatin, Edward F. Wells, Chicago.

The Morphin Series, Smith Ely Jelliffe, New York.

The Composition of Some of the Lately Introduced Nostrums and So-called Synthetics, William J. Robinson, New York.

The U. S. Pharmacopeia of 1900, Carl S. N. Hallberg, Chicago.

Advance in Electric Therapeutics, A. W. Baer, Chicago.
Recent Advances in Actinotherapy, William S. Gottheil, New York.

Dry Superheated Air in Therapeutics, Clarence E. Skinner, New Haven, Conn.

Section on Pathology and Physiology.

Chairman, Victor C. Vaughan, Ann Arbor, Mich.; Secretary, Joseph McFarland, 442 W. Stafford Street, Germantown, Pa.

The Chemistry of the Bacillus Coli Communis, Mary F. Leach.

The Chemistry of the Bacillus Typhosus, May Wheeler.

The Toxicity of the Intra-cellular Substance of Bacillus Typhosus, Louis M. Gelston.

The Anthrax Toxin, J. Walter Vaughan, St. Louis.

The Intra-cellular Toxin of Bacillus Pyocyaneus, Daniel McIntyre.

A Preliminary Chemical Study of the Hepatic Cells of the Ox, Frank Spencer and Frederick Munson.

The Toxicogenic Bacteria Found in Drinking Water, William G. Carhart.

The Chemical Tests for Morphin in the Presence of the Products of Bacterial Decomposition, Myron W. Clift.

Endothelioma of the Uterus, F. Robert Zeit, Chicago.

Condition of the Endometrium in Cases of Uterine Myomata, Thomas S. Cullen, Baltimore.

Demonstration of a "Mixed Tumor of the Kidney (Wilms), E. R. LeCount, Chicago.

Multiple Periosteal Sarcomata of the Cranium, with Involvement of Retroperitoneal Lymph (Hemo-lymph) Nodes and Attending Severe Anemia, Walter L. Bierring, Iowa City, Iowa.

Primary Intestinal Tuberculosis, with Organism Pathogenic to a Calf, H. Gideon Wells, Chicago.

The Apparent Immunizing Value of Attenuated Tubercle Bacilli, E. A. de Schweinitz, Washington, D. C.

Studies of Antirennene, Joseph McFarland, Philadelphia.

A Case of Short-limbed Dwarfism, L. Hektoen, Chicago.

A Case of Giantism and Leontiasis Ossea, in the Lantern Slide Demonstration, E. R. LeCount for Peter Bassoe, Chicago.

Tissue Changes Under X-Ray Influence, W. S. Newcomet, Philadelphia.

The Protoplasmic Activity of the Renal Epithelium, as Determined by the Elimination of Pigments Injected Into the Circulation, W. S. Carter, Galveston, Texas.

Demonstration of New Physiologic Apparatus, Winfield S. Hall, Chicago.

The Working Capacity of a Muscle, J. G. Holmes, Chicago.

The Neuralgia and the Ependymal Epithelium of Teratoid Tumors, Henry A. Christian, Boston.

The Morphology and Biology of the Parasites of Blastomycetic Dermatitis, F. J. Otis and Newton Evans, Battle Creek, Mich.

The Principle of Invalid Feeding, L. Breisacher, Detroit.

The Biologic Aspects of Motion, Guido Bell, Indianapolis.

The Influence of Consanguinity on the Organs of Special Sense, L. W. Dean, Iowa City, Iowa.

The Cultivation of Trypanosoma Lewisii, F. G. Novy and W. J. McNeal, Ann Arbor, Mich.

A Study of the Influence of Blood Letting on Metabolism, also the Influence of Chinic Acid on Uric Acid Output, William Gies, New York.

Precision in the Determination of Human Parasites, Henry B. Ward, Lincoln, Neb.

Aerogenes Capsulatus Infection of the Neck, Louis Leroy, Nashville, Tenn.

New Members.

For the month of March, 1903:

ALABAMA.

Snyder, J. Ross, Birmingham.
Bancroft, Marion J., Mobile.
May, Wm. L., Sandusky.
Wright, Ruffin A., Mobile.
King, Goldsby, Selma.
Peerson, J. M., Florence.

ARKANSAS.

Gill, John M. F., Prescott.
Allen, Kotz, Wheatley.
Weaver, J. H., Hope.
Smiley, John L., Robinson.
Wilson, Olive A. Chas., Paragould.
Bradford, T. B., Cotton Plant.

McCallum, John A., Arkadelphia.
Pettey, Geo. E., Searcy.

CALIFORNIA.

Willard, Wm. P., San Francisco.
Brill, Wm., Los Angeles.
Topping, Frank Pixley, San Francisco.
Ardeny, Jos., San Francisco.
Tower, Franklyn J., Pasadena.
Roblee, W. M., Riverside.

DISTRICT OF COLUMBIA.

Carroll, Jas., Washington.
Lawrence, Albert L., Washington.
Dufour, Clarence R., Washington.
Merrill, Walter H., Washington.
Richardson, Edw. E., Washington.
Ward, Wm. Kraft, Washington.

FLORIDA.

Grantham, J. M., Tampa.

GEORGIA.

Green, Wm. L., Point Peter.

IDAHO.

Harshbarger, Miller M., St. Anthony.

ILLINOIS.

Schneider, G. J., Elgin.
Bates, Frederick H., Elmhurst.
Chester, Paul, Chicago.
Watson, H. A., Chicago.
Badgley, John A., Malta.
Campbell, John T., Chicago.
Brophy, Truman W., Chicago.
Kimmitt, Wm. Alex., Chicago.
Beck, Emil G., Chicago.
Mahoney, Jas. Burris, Chicago.
Schmidt, Marie S., Chicago.
Craig, D. W., Chicago.
Klein, Henry, Chicago.

INDIANA.

Crawford, E. F. W., Hanna.
Bryan, T. L., Evansville.
Dippell, Emil T., Huntington.
Tindal, Edw. F., Muncie.
Brayton, Nelson D., Indianapolis.
Woodson, Benj. D., Monroe.

IOWA.

Hogle, Kate Anna M., Mt. Vernon.
Lehou, Jas. W., Dunlap.
Bowen, Chas. P., Centerville.

KENTUCKY.

Coldwell, Thos. P., London.
Mobley, J. C., Elizabethtown.
Gardner, W. E., Glendale.
Willis, S. N., Vine Grove.
Allen, M. S., Stillton.
Gray, Jas. R., Elizabethtown.
Stone, Daniel Boone, Hydro.
Bailey, Steele, Stanford.
Sprague, Geo. P., Lexington.
Lewis, John C., Georgetown.

LOUISIANA.

Gaudin, Louis A., Convent P. O.
Jones, Edw. W., New Orleans.
Moton, S. F., New Orleans.
Huhner, E. J., New Orleans.
Stafford, S. W., New Orleans.
Lynch, W. M., New Orleans.
Hebert, J. S., New Orleans.
Yenni, A. S., New Orleans.
Horton, Clarence L., New Orleans.
Theard, Sidney L., New Orleans.
Elliot, Jno. B., New Orleans.
Nolte, Arthur, New Orleans.
King, Gordon, New Orleans.
Logan, Samuel, New Orleans.
Michnard, Paul, New Orleans.
Dupuy, Homer, New Orleans.
Gates, Sterling J., Franklin.
Smith, Beverly W., Franklin.
Patterson, O. M., Bastrop.
Hope, Chas. L., Oak Ridge.
Williams, Sidney L., Oak Ridge.
Porter, S. D., Moreauville.
Newell, E. Dunbar, St. Joseph.
Dortch, Fred'k Wm., Barham.

MARYLAND.

Cotton, Albertus, Baltimore.
Abercrombie, John R., Baltimore.
Frames, W. Wayland, Baltimore.
Bishop, John S., Baltimore.
McGlannan, Alexius, Baltimore.
Gabriel, Calvin L., Baltimore.
Cole, J. Wesley, Baltimore.
Knox, Jr., J. H. Mason, Baltimore.
Price, Marshall Layton, Baltimore.

MASSACHUSETTS.

Clark, Frederick T., Westfield.
Washburn, Frank H., Jefferson.

MICHIGAN.

Tapert, R. T., Detroit.
Ingleright, Leon R., Rose City.
Nelson, E. B., Chassell.
Eggleston, Elmer L., Battle Creek.
McGee, Harry S., Jackson.
Rush, Adelbert G., Grand Rapids.
Fleming, Wm. E., Detroit.

MINNESOTA.

McLean, Thos. Nicol, Fergus Falls.
Weeks, Leonard C., Detroit.
Linton, Wm. B., Minneapolis.
Anderson, A. E., Minneapolis.
Oliver, Clifford Irwin, Graceville.
Tanner, Andrew F., Ely.

MISSISSIPPI.

Yandell, Wm. M., Canton.
Sims, Walter Scott, Jackson.
Rowan, Jas. Albert, Wesson.

NEBRASKA.

Malster, John Chas., Stromsburg.
Pinkerton, W. J., Mead.
Lewis, Alfred, Valentine.

NEW HAMPSHIRE.

Noyes, Edmund Herbert, Plalstow.

NEW JERSEY.

Canaway, Walt Pouder, Atlantic City.

NEW YORK.

Knapp, Wm. H., Binghamton.
Rand, H. W., Keene Center.
Rambaud, Geo. Glibier, New York.
Fridenburg, Percy, New York.
Ellison, Chas. Ruxton, New York.
Billings, Jr., John S., New York.
Smith, Harmon, New York.
Ayzazian, Antranig, New York.
Cassell, Jas. Wilson, New York.
Heuel, Frank, New York.
Brouner, Walter Brooks, New York.
Gallagher, Edw. J., New York.
Brunner, Wm. J., New York.
Chauveau, Jean F., New York.
Kirchhof, Chas. Geo., New York.
Flint, Jr., Austin, New York.
McAuliffe, Denis A., New York.
Lurie, Jos. H., New York.
Pettit, Louis C., Ward's Island, New York.

Piper, Chas. W., Wurtsboro.
Parmenter, John, Buffalo.
Nour, George Elias, Niagara Falls.
Ransom, David H., Buffalo.
Dumond, Marcus Abner, Ithaca.
Myers, John Franklin, Sodas.
Tremaine, Annie M., Sonyea.
Clark, Geo. W., Waterloo.
Beers, Jr., Nathan Thomas, Brooklyn.

Ross, Wm. Jas., Clayton.
Crosby, Alex. H., Leonville.
Donohue, F. O., Syracuse.
Carroll, Jane W., Buffalo.
Bassett, John N., Canton.
Carpenter, Eugene H., Onida.
Nevin, Ethan A., Ogdensburg.
DeCen, Robt. E., Buffalo.
Ayer, Warren L., Owego.
Schroeter, Ludwig, Buffalo.

NORTH CAROLINA.

Williams, John A., Reidsville.

OHIO.

Forchheimer, Fred'k, Cincinnati.

OKLAHOMA.

Munger, G. D., Oklahoma City.

PENNSYLVANIA.

Rea, Jas. L., Scranton.
Sajous, C. E. de M., Philadelphia.

SOUTH CAROLINA.

Culbertson, John R., Replax.
Hill, L. T., Abbeville.
Pressley, E. W., Clover.

SOUTH DAKOTA.

Cruikshank, Thos., Vermillion.
Schofield, Henry B., Scotland.
Edward, Geo., Lake Preston.

TENNESSEE.

Cook, Maximillian Montrose, Santa Fe.
Williams, D. H., Knoxville.
Clarke, Claude Y., Mt. Pleasant.

TEXAS.

Van Zandt, I. L., Ft. Worth.
Mahews, John Owen, Howe.
Cloch, Ernest Linwood, Beaumont.
Wheat, M. H., Marshall.
Vermillion, John W., McDade.
Burke, Henry Sothoron, Corpus Christi.

UTAH.

Root, Emerson Frank, Salt Lake City.

VIRGINIA.

Sparks, Geo. H., Crooked Run.

WASHINGTON.

Thomson, Curtis H., Seattle.
Falk, Frederick, Seattle.

WEST VIRGINIA.

Canaday, John Egerton, Paint Creek.

WISCONSIN.

Caswell, Harlow O., Ft. Atkinson.
Casey, Merle, Almond.
Ballard, J. A., LaCrosse.
Gregory, W. W., Stevens Point.

PROPOSED CODE OF ETHICS

Offered at Saratoga Springs, 1902, and to Be Acted on at New Orleans.

At the last session of the American Medical Association the following action was taken:

Dr. E. Eliot Harris, New York, presented the following resolution:

For more than a year some of the members of the Council of the New York State Medical Association have been engaged in a critical examination of the ethical part of the laws of the American Medical Association, resulting in the preparation of a revision of the Code of Medical Ethics. This revision has been approved by the Council of the New York State Medical Association, and the delegates have been instructed to present it to the House of Delegates at this session.

Resolved, That the President appoint a committee of five to examine and report for final action at the annual session in 1903 the proposed revised Code of Medical Ethics which is herewith submitted in writing;

Resolved, That the proposed revised Code of Medical Ethics be published in the Association's JOURNAL three times before the meeting in 1903.

On motion of Dr. C. A. L. Reed, Cincinnati, the resolution was adopted.

The following constitute the committee: Dr. E. Eliot Harris, New York, chairman; Dr. William H. Welch, Baltimore; Dr. T. J. Happel, Tennessee; Dr. Nicholas Senn, Chicago, and Dr. Joseph D. Bryant, New York.

CHAPTER I.—OF THE DUTIES OF PHYSICIANS TO THEIR PATIENTS AND OF THE OBLIGATIONS OF PATIENTS TO THEIR PHYSICIANS.

ARTICLE I.—DUTIES OF PHYSICIANS TO THEIR PATIENTS.

SECTION 1.—Physicians should not only be ever ready to obey the calls of the sick, but should be mindful of the high character of their mission and of the responsibility they must incur in the discharge of momentous duties. In their ministrations they should never forget that the case, the health, and the lives of those entrusted to their care depend on skill, attention, and fidelity. In their deportment they should unite tenderness, cheerfulness and firmness, and thus inspire all sufferers with gratitude, respect and confidence. These observances are the more sacred because, generally, the only tribunal to adjudge penalties for carelessness or neglect is their own conscience.

SEC. 2.—Every case committed to the charge of a physician should be treated with attention and humanity, and reasonable indulgence should be granted to the caprices of the sick. Secrecy and delicacy should be strictly observed; and the familiar and confidential intercourse to which physicians are admitted, in their professional visits, should be guarded with the most scrupulous fidelity and honor.

SEC. 3.—The obligation of secrecy extends beyond the period of professional services; none of the privacies of individual or domestic life, no infirmity of disposition or flaw of character observed during medical attendance should ever be divulged by physicians, except when imperatively required to do so by the laws of the state. The force of the obligation of secrecy is so great that physicians have been protected in its observance by courts of justice.

SEC. 4.—Frequent visits to the sick are generally requisite, since they enable the physician to arrive at a more perfect knowledge of the disease, and to meet promptly every change which may occur. But unnecessary visits are to be avoided, as they give undue anxiety to the patient.

SEC. 5.—Ordinarily, the physician should not be forward to make gloomy prognostications, but should not fail, on proper occasions, to give to the friends of the patient timely notice of danger when it really exists; and even to the patient, if absolutely necessary. This physician, that its deliverance ought to be declined whenever it can be assigned to any other person of good judgment.

SEC. 6.—The physician should be the minister of hope and comfort to the sick, since life may be lengthened or shortened not only by the acts but by the words or manner of the physician whose solemn duty is to avoid all utterances and actions having a tendency to discourage and depress the patient.

SEC. 7.—The medical attendant ought not to abandon a patient because deemed incurable; for, continued attention may be highly useful to the sufferer, and comforting to the relatives, even in the last period of the fatal malady, by alleviating pain and by soothing mental anguish.

SEC. 8.—The opportunity which a physician has of promoting and strengthening the good resolutions of patients suffering under the consequences of vicious conduct ought never to be neglected. Good counsels, or even remonstrances, will give satisfaction, not offense, if they be tactfully proffered and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

ARTICLE II.—OBLIGATIONS OF PATIENTS TO THEIR PHYSICIANS.

SECTION 1.—The members of the medical profession, on whom is enjoined the performance of so many important and arduous duties toward the community, and who are required to make so many sacrifices of comfort, ease, and health, for the welfare of those who avail themselves of their services, are surely entitled to the highest private and public recognition.

SEC. 2.—The first duty of a patient is to select as medical adviser one who has received a sound general and special education, whose habits are good, and who is not devoted to any pursuit incompatible with professional obligations.

SEC. 3.—The sick should always apply for advice in what may appear to be a trivial case, for the slightest accident may result gravely. It is also important that the patient seek assistance in the forming stage of a violent disease and communicate unreservedly to the physician its supposed cause.

SEC. 4.—The patient should be on friendly terms with the medical adviser and bear in mind that physicians are under the strongest obligations of secrecy.

SEC. 5.—Women should never allow feelings of delicacy to prevent their disclosing the seat of their peculiar complaints. Howsoever commendable a modest reserve may be in the common occurrences of life, its strict observance in medicine is often attended with serious consequences, and a patient may sink under a painful disease which might have been prevented had timely intimation been given to the physician.

SEC. 6.—The obedience of a patient to the directions of the physician should be prompt and implicit. Failure in one particular may render an otherwise judicious treatment dangerous and even fatal. This remark is equally applicable to the unauthorized renewal of prescriptions, and to diet, drink, raiment and exercise.

SEC. 7.—As patients become convalescent they are apt to suppose that the rules prescribed for them may be disregarded, and the consequence, but too often, is a relapse of the disease.

SEC. 8.—Patients should never allow themselves to be persuaded to take any medicine whatever that may be recommended to them by the self-constituted doctors who are so frequently met with and who pretend to possess infallible remedies for every disease. Howsoever simple some of their prescriptions may appear to be, it often happens that, besides being in themselves injurious, they are productive of much mischief by contravening the plan of treatment adopted by the physician in attendance.

SEC. 9.—Whenever possible, the patient should avoid even friendly visits of a physician who is not the regular attendant. But when such visits are received, there should be no conversation on the subject of the patient's disease, as a word may be spoken, without any intention of interference, which may destroy confidence in the course pursued and induce the patient to neglect the prescribed directions.

SEC. 10.—The patient or relatives should never send for a consulting physician without the express consent of the medical attendant.

SEC. 11.—Patients should, whenever practicable, send for their physicians in the morning, before the usual hour for going out, and this gives them the opportunity to so apportion their time as to prevent interference of engagements.

SEC. 12.—Except in emergencies patients should avoid calling on their medical advisers during the hours devoted to meals or sleep.

SEC. 13.—The sick should be always in readiness to receive the visits of the physician, as detention, even for a very short time, is often of serious import to some other sufferer.

CHAPTER II.—OF THE DUTIES OF PHYSICIANS TO EACH OTHER AND TO THE PROFESSION AT LARGE.

ARTICLE I.—DUTIES FOR THE SUPPORT OF PROFESSIONAL CHARACTER.

SECTION 1.—Every individual on entering the profession, and thereby becoming entitled to all its privileges and immunities, incurs an obligation to maintain its dignity and honor, to exalt its standing and to extend the bounds of its usefulness.

SEC. 2.—The physician should observe strictly such laws as are instituted for the government of the members of the profession; should honor the fraternity as a body; and, by unwearied diligence, should resort to every honorable means of enriching the science, and, at the same time, entertain a due respect for those seniors who, by their labors, have contributed to its advancement.

SEC. 3.—There is no profession from the members of which greater purity of character and a higher standard of moral excellence are required than the medical; and to attain such eminence is a duty every physician owes alike to the profession and to patients. It is due to these, as without it their respect and confidence can not be commanded; and to the profession because no scientific attainments can compensate for the want of correct moral principles.

SEC. 4.—It is incumbent on physicians to be temperate in all things, for the practice of medicine requires the unremitting exercise of a clear and vigorous understanding; and in emergencies—for which no physician should be unprepared—a steady hand, an acute eye, and an unclouded mind are essential to the welfare, and even to the life, of a human being.

SEC. 5.—It is derogatory to the dignity of the profession to resort to public advertisements or private cards inviting the attention of persons affected with particular diseases, offering advice and medicine gratis and promising radical cures; or to publish cases and operations in the daily prints, or to suffer such publications to be made; to invite laymen (other than relatives who may desire to be at hand) to be present at operations; to boast of cures and remedies; to adduce certificates of skill and success; or to employ any of the other methods of charlatans.

SEC. 6.—Equally derogatory to professional character it is for a physician to hold a patent for any surgical instrument or medicine; or to dispense, or promote the use of, a secret medicine, whether it be composed by this physician or the exclusive property of others, for if such nostrum be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality, and if mystery alone give it public notoriety, such craft implies either disgraceful ignorance or fraudulent avarice. It is highly reprehensible for physicians to give certificates attesting the efficacy of secret medicines, or of any of the other substances that may be used medicinally.

ARTICLE II.—PROFESSIONAL SERVICES OF PHYSICIANS TO EACH OTHER.

SECTION 1.—All practicing physicians and their immediate dependents are entitled to the gratuitous services of any one or more of the physicians residing near them.

SEC. 2.—Physicians afflicted with disease should not, as a general rule, undertake the treatment of their own sickness, nor of that

of members of their family, for obvious reasons. In such circumstances they are peculiarly dependent on each other; therefore, kind offices and professional aid should always be cheerfully and gratuitously afforded. Visits ought not, however, to be obtruded officiously, as such civility may give rise to embarrassment or interfere with that choice on which confidence depends.

SEC. 3.—When a physician is summoned, from a distance, to the bedside of a colleague in easy financial circumstances, a compensation, proportionate to traveling expenses and to the pecuniary loss entailed by absence from the accustomed field of professional labor, should be made by the patient or relatives.

ARTICLE III.—OF THE DUTIES OF PHYSICIANS AS RESPECTS VICARIOUS OFFICES.

SECTION 1.—The affairs of life, the pursuit of health and the various accidents and contingencies to which a physician is peculiarly exposed sometimes require the temporary withdrawal of this physician from daily professional labor and the appointment of a colleague to act for a specified time.

SEC. 2.—The colleague's compliance is an act of courtesy which should always be performed with the utmost consideration for the interest and character of the family physician, and when exercised for a short period half of the pecuniary obligations for such services should be awarded to the acting physician.

ARTICLE IV.—OF THE DUTIES OF PHYSICIANS IN REGARD TO CONSULTATIONS.

SECTION 1.—The broadest dictates of humanity should be obeyed by physicians whenever and wherever their services are needed to meet emergencies occasioned by disease or accident.

SEC. 2.—The good of the patient being the sole object in view, any physician having a license to practice medicine conferred by a medical board authorized by the state may be aided in consultation.

SEC. 3.—No physician who indicates to the public that his practice is based on a sectarian system of medicine shall be entitled to professional fellowship or to recognition in medical bodies.

SEC. 4.—Consultations should be promoted in difficult cases, as they give rise to confidence and more enlarged views in practice.

SEC. 5.—The utmost punctuality should be observed in the visits of physicians when they are to hold consultations, and this is generally practicable, for society has been so considerate as to allow the plea of a professional engagement to take precedence over all others and to be a good reason for the relinquishment of any present occupation.

SEC. 6.—As professional engagements may sometimes interfere and delay one of the parties, the physician who first arrives should wait for a reasonable time, after which the consultation should be considered as postponed to a new appointment.

SEC. 7.—In consultations no rivalry or jealousy should be indulged; candor, probity and all due respect should be observed toward the physician in charge of the case.

SEC. 8.—The attending physician should be the first to question the sick, after which the consultant should have the opportunity to make such further inquiries as may be necessary.

SEC. 9.—After due examination of the patient, both physicians should retire to a private place for deliberation; and the one first in attendance should communicate the directions, agreed on, to the patient or friends, as well as any opinion which it may be thought proper to express.

SEC. 10.—No statement or discussion of the case should take place before the patient or friends, except in the presence of all the physicians attending, and by their common consent; and no opinions or prognostications should be delivered which are not the result of previous deliberation and concurrence.

SEC. 11.—The opinion of the physician in attendance should be delivered first to the patient or friends; and when there are several consultants they should deliver their opinions in the order in which they have been called.

SEC. 12.—No decision should restrain the attending physician from making such variations in the mode of treatment as any subsequent unexpected change in the character of the case may demand. But at the next consultation reasons for the variations should be stated. The same privilege, with its obligation, belongs to the consultant when sent for in an emergency during the absence of the family physician.

SEC. 13.—The attending physician, at any time, may prescribe for the patient; not so the consultant, when alone, except in a case of emergency or when called from a considerable distance. In case of emergency the consultant should do what is needed, and in the other case should do no more than make an examination of the patient and leave a written opinion, under seal, to be delivered to the attending physician.

SEC. 14.—In consultations theoretical discussions should be avoided, as occasioning perplexity and loss of time. For there may be much diversity of opinion concerning speculative points, with perfect agreement in those modes of practice which are founded not on hypothesis, but on experience and observation.

SEC. 15.—All discussions in consultation should be held as confidential. Neither by words nor manner should any of the parties to a consultation assert or intimate that any part of the treatment pursued did not receive his assent.

SEC. 16.—Should an irreconcilable diversity of opinion occur when several physicians are called on in consultation, the opinion of the majority should be considered as decisive; but if the numbers be equal on each side, then the decision should rest with the attending physician.

SEC. 17.—It may happen that two physicians can not agree in their views of the nature of a case and of the treatment to be pursued. In the event of such disagreement a third physician should, if practicable, be called in and, if circumstances prevent the adoption of this course, the patient or friends should make the selection. The physician so designated should take charge of the case and the other should then gracefully retire from any further deliberation in the consultation, or participation in the management of the case.

SEC. 18.—As circumstances sometimes arise to render a special consultation desirable, when the continued attendance of two physicians might be objectionable to the patient, the physician whose

assistance is required in such cases should sedulously guard against all future, unsolicited attendance. Such consultations requiring an extraordinary portion of time and attention, at least a double fee should be expected.

SEC. 19.—A physician who is called in consultation should observe the most honorable and scrupulous regard for the character and standing of the attending physician, whose conduct of the case should be justified as far as can be, consistently with a conscientious regard for truth, and no hint or insinuation should be thrown out which could impair the confidence reposed in the attending physician.

ARTICLE V.—DUTIES OF PHYSICIANS IN CASES OF INTERFERENCE.

SECTION 1.—Medicine being a liberal profession, those admitted to its ranks should found their expectations of practice entirely on the extent of their medical education.

SEC. 2.—The physician, in his intercourse with a patient under the care of another physician, should observe the strictest caution and reserve; should give no disingenuous hints relative to the nature and treatment of the patient's disorder, nor should the course of conduct of this physician directly or indirectly tend to diminish the trust reposed in the attending physician.

SEC. 3.—The same circumspection should be observed when, from motives of business or friendship, a physician is prompted to visit a person who is under the direction of another physician. Indeed, such visits should be avoided, except under peculiar circumstances; and when they are made, no particular inquiries should be instituted relative to the nature of the disease, or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

SEC. 4.—A physician ought not to take charge of, or prescribe for, a patient who has recently been under the care of another physician in the same illness, except in case of a sudden emergency, or in consultation with the physician previously in attendance, or when that physician has relinquished the case or has been dismissed in due form.

SEC. 5.—Placed in the position stated in the preceding section, the physician should never throw out damaging insinuations on the practice previously adopted, and, indeed, should justify it if consistent with truth and probity; for it often happens that patients become dissatisfied when they are not immediately relieved, and, as many diseases are naturally protracted, the seeming want of success, in the first stage of treatment, affords no evidence of a lack of knowledge or skill.

SEC. 6.—When a physician is called to an urgent case, because the family attendant is not at hand, unless assistance in consultation is desired, this physician should resign the care of the patient immediately on the arrival of the family physician.

SEC. 7.—It often happens, in cases of sudden illness, or of accidents and injuries, owing to the alarm and anxiety of friends, that several physicians are simultaneously summoned. Under these circumstances, courtesy should assign the patient to the first who arrives and who, if necessary, may invoke the aid of some of those present. In such a case, however, the acting physician should cause the family physician to be called, and should withdraw unless requested to continue in attendance.

SEC. 8.—Whenever a physician is called to the patient of another physician during the enforced absence of that physician the case should be surrendered on the return of the absentee.

SEC. 9.—A physician, while visiting a sick person in the country, may be asked to see another physician's patient in consequence of a sudden aggravation of the disease. On such an occasion the immediate needs of the patient should be attended to and the case relinquished on the arrival of the attending physician.

SEC. 10.—When a physician who has been engaged to attend an obstetric case is absent and another is sent for, delivery being accomplished during the vicarious attendance, the acting physician is entitled to half the fee, but must resign the patient on the arrival of the physician first engaged.

ARTICLE VI.—OF DIFFERENCES BETWEEN PHYSICIANS.

SECTION 1.—Diversity of opinion and opposition of interest may, in the medical as in other professions, sometimes occasion controversy and even contention. Whenever such cases unfortunately occur and can not be immediately terminated, they should be referred to the arbitration of a sufficient number of physicians or a court-medical.

SEC. 2.—A peculiar reserve must be maintained by physicians toward the public in regard to some professional questions, and as there exist many points in medical ethics and etiquette through which the feelings of physicians may be painfully assailed in their intercourse, and which can not be understood or appreciated by general society, neither the subject-matter of their differences nor the adjudication of the arbitrators should be made public.

ARTICLE VII.—OF PECUNIARY ACKNOWLEDGMENT.

SECTION 1.—There is no profession by the members of which eleemosynary services are more liberally dispensed than the medical, but justice requires that some limits should be placed to their performance.

SEC. 2.—Poverty, mutual professional obligations, and certain of the public duties named in Sections 1 and 2 of Article 1, of Chapter III, should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public or by the rich, or by societies for mutual benefit, for life insurance, or for analogous purposes, or any profession or occupation, can be admitted to possess such privilege.

SEC. 3.—It can not be justly expected of physicians to furnish certificates of inability to serve on juries, or to perform militia duty; or to testify to the state of health of persons wishing to insure their lives, obtain pensions, or the like, without a pecuniary acknowledgment. But to persons in indigent circumstances such services should always be cheerfully and freely accorded.

SEC. 4.—Some general rules should be adopted by the physicians in every town or district relative to the minimum pecuniary acknowledgment from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit.

SEC. 5.—It is derogatory to professional character for physicians to pay or to offer to pay commissions to any person whatsoever

who may recommend to them patients requiring general or special treatment or surgical operations. It is equally derogatory to professional character for physicians to demand or to receive such commissions.

CHAPTER III.—OF THE DUTIES OF THE PROFESSION TO THE PUBLIC AND OF THE OBLIGATIONS OF THE PUBLIC TO THE PROFESSION.

ARTICLE I.—DUTIES OF THE PROFESSION TO THE PUBLIC.

SECTION 1.—As good citizens it is the duty of physicians to be very vigilant for the welfare of the community, and to bear their part in sustaining its institutions and burdens; they should also be ever ready to give counsel to the public in relation to subjects especially appertaining to their profession, as on questions of sanitary police, public hygiene and legal medicine.

SEC. 2.—It is the province of physicians to enlighten the public in regard to quarantine regulations; to the location, arrangement, and dietaries of hospitals, asylums, schools, prisons and similar institutions; in relation to the sanitary police of towns, as drainage, ventilation, etc.; and in regard to measures for the prevention of epidemic and contagious diseases; and when pestilence prevails, it is their duty to face the danger, and to continue their labors for the alleviation of the suffering people, even at the risk of their own lives.

SEC. 3.—Physicians, when called on by legally constituted authorities, should always be ready to enlighten inquests and courts of justice on subjects, strictly medical, such as involve questions relating to sanity, legitimacy, murder by poison or other violent means, and various other subjects embraced in the science of medical jurisprudence. It is but just, however, for them to expect due compensation for their services.

SEC. 4.—It is the duty of physicians, who are frequent witnesses of the great wrongs committed by charlatans, and of the injury to health and even destruction of life caused by the use of their treatment, to enlighten the public on these subjects, and to make known the injuries sustained by the unwary from the devices and pretensions of these artful impostors.

SEC. 5.—Physicians ought to use all the influence which they possess to discourage pharmacists from vending the secret or other medicines of charlatans, or from being in any way engaged in their manufacture.

ARTICLE II.—OBLIGATIONS OF THE PUBLIC TO PHYSICIANS.

SECTION 1.—The benefits accruing to the public, directly and indirectly, from the unwearying labors of the profession, are so numerous and important that physicians are entitled to the utmost consideration and respect from the community.

SEC. 2.—The public ought to entertain a just appreciation of medical qualifications, to make a proper discrimination between true science and the assumptions of ignorance and charlatanism; and to afford every encouragement and facility for the acquisition of thorough medical education.

Medical Organization.

The Reorganized States.

It is now less than a year since any of the states adopted the plan of organization, but the progress made in each of them even in that short time has been so marked as to be worthy of special mention.

Michigan.

Michigan accepted the new plan in June, 1902, with only such changes as were necessary to adapt it to local conditions. Dr. Connor informs me that at that time they had but 10 recognized societies, only 5 of which were active, 7 medical clubs, and 5 district societies. The total membership in the state society was 610, of whom 100 were so in arrears for dues that they were practically out.

Much enthusiasm was manifested from the outset and, under the able leadership of Drs. Connor, Bulson, Haughey, Biddle and others too numerous to mention, 70 counties, out of 83 in the state, have been organized and chartered, and missionary work is being actively pressed in each of the others. The paid-up membership has been increased in ten months to over 1,600, and is expected to reach 2,000 before the annual meeting, new members being reported daily. Prominent members from all over the state write that the hopes, aspirations and good fellowship have increased even more than the membership.

Michigan has gone farther than any other state in making its council a strong executive body, with full authority to act for the society in the interim of meetings. The results achieved, as well as those in process of fulfillment, clearly demonstrate the wisdom of this policy. The council held frequent meetings and soon had the state divided into districts, with an active councilor in each who called the physicians together in county after county, brought to their attention the evils which have resulted to both the profession and the public from dissensions in its own ranks in the past, and the good which must result to all from such harmony and co-operation, which can only be brought about by local organizations. These

efforts have been well supported by the journal of the state society, which was established by the council as soon as possible after the re-organization, is the property of the society, is sent free to every member in lieu of the volume of transactions, and is already on a paying basis.

Tennessee.

The Tennessee State Society adopted the Association plan, practically without change, in May, 1902. At that time 14 county societies existed, some active, some more or less dormant, and the total membership in the state body was about 280. During the ten months 49 county societies have been organized and chartered and the membership in the state body has been increased to over 800, with promise of five or six more counties, and a total membership of over 1,000 before the next annual meeting. Drs. Miller, Savage, McSwain, Happel, Roberts and many others have been untiring in their efforts to bring about these results, and a revival of interest in professional affairs is manifest in almost every section.

Kentucky.

Kentucky was the second state to adopt the Association plan without change. Twenty county societies then existed, several of them dormant. The total membership in the state association was 551, and about 25 per cent. of these were in arrears for dues. In ten months 72 county societies had been organized and chartered, and 20 more have appointments for organization. Reports from county secretaries are not yet due, and the total membership can not be known accurately until these come in, but it is believed it will be increased to over 1,500 paid-up members. The president of the state association has visited and organized every county in his large district not already in line, as have Drs. Shirley and Wells in their respective districts. Other councilors especially active have been Drs. Frank, Sory, A. T. McCormack, and Steele Bailey, who is also secretary of the association.

OTHER STATES.

Data in regard to Ohio, Colorado and Arkansas, could not be obtained in time for this issue, but active, systematic work is being done in these states, of which full details will be supplied later.

Pennsylvania and Connecticut were previously organized on lines similar to those of the Association plan, and excellent work is going on in these states. It is believed, however, that they would be especially benefited by incorporating the essential features of the uniform system.

Several other states reorganized last year and thought they were adopting the plans of the Association, but in practice it was found that they had modified it almost beyond recognition. So much trouble and confusion has resulted in these states that most of them will probably substitute the uniform system at their coming annual meetings. In the future it will doubtless be better for the friends of a systematic organization of the profession to advise that existing constitutions and by-laws be retained, rather than go through a form of reorganization in which the essential features of the Association plan are ignored. There are sparsely settled districts in nearly every state in which the rank and file of the profession has never been reached in the past, and this has been and will continue to be a difficult problem, but the uniform system proposed is susceptible of infinite and easy modifications as experience may develop the necessity for them, and the results in the states first named above show that it meets the conditions more fully than any other plan which has yet been tried.

This whole question is so important that it is earnestly suggested that representatives to the House of Delegates at the next session come to New Orleans with the facts and figures in regard to all these matters in their respective states well in hand, and that one or more days be given to the consideration of the subject.

J. N. McCORMACK.

Bowling Green, Ky.

Omaha-Douglas County (Neb.) Medical Association.

At its meeting, March 27, the new constitution suggested by the American Medical Association for county organizations was

formally adopted. The reorganized society has a membership of 114 out of a possible 125 eligible physicians in the county.

Iosco County (Mich.) Medical Society.

The physicians of this county met at East Tawas, March 25, and organized this society as a branch of the Michigan State Medical Society, with the following officers: Dr. Henry A. Goodale, East Tawas, president; Dr. George S. Darling, Tawas City, vice president, and Dr. Frederick C. Thompson, East Tawas, secretary.

Marinette County (Wis.) Medical Society.

Pursuant to a call from Theodore J. Redelings, eleven physicians met at Marinette, March 24, and organized a county society on the lines proposed by the American Medical Association. Dr. Theodore J. Redelings, Marinette, was elected president; Dr. William Sellars, Wausaukee, vice-president, and Dr. A. T. Nadeau, secretary and treasurer.

Medical Society of the Tenth Councilor District of Arkansas.

The Northeast Arkansas Medical Society met at Fort Smith, March 24 and 25, and reorganized as the Medical Society of the Tenth Councilor District of Arkansas. Dr. E. G. McCormick, Prairie Grove, was elected president; Dr. John S. Shibley, Paris, vice-president; Dr. Frank B. Young, Springdale, secretary, and Dr. Buchanan Hatchett, Fort Smith, treasurer. A strong representation from every county in the district was present, and the society starts with the most flattering prospects for its future. This is the first councilor district medical society organized in Arkansas. It is to meet semi-annually, in March and September. The next meeting will be held in Fayetteville, September 29 and 30.

Denver Academy of Medicine.

After a year's preliminary work and agitation carried on by a few prominent members of the profession, the organization of the Denver Academy of Medicine was consummated Tuesday, March 31, 1903. The object of the academy, as expressed in its constitution is "the promotion of the science and art of medicine, co-operation among local medical organizations, the maintenance of a place for medical gatherings and the support of medical libraries." It is expected that in the near future the medical profession of Denver will possess a home of their own, where the various medical libraries and collections now scattered will be united under one roof, where all the medical societies of the city will meet, and a museum and laboratory for investigation and research will be maintained. The election of officers resulted as follows: President, Dr. Henry Sewall; vice-president, Dr. George B. Packard; trustees, 3 years, Drs. W. A. Jayne and W. W. Grant; 2 years, Drs. Thomas H. Hawkins and L. E. Lemen; 1 year, Drs. W. H. McLauthlin and I. B. Perkins; secretary, Dr. C. K. Fleming; treasurer, Dr. Frank E. Waxham; librarian, Dr. C. D. Spivak.

Kentucky County Societies.

The work of organization progresses in Kentucky, as is shown by the following record:

The physicians of Bailey County organized at Middlesboro, March 23, electing Dr. Leslie L. Robertson, president, and Dr. Macauley Arthur, secretary, both of Middlesboro.

The physicians of Taylor County met at Campbellsville, March 25, and after an address by Dr. Robert C. McChord, Lebanon, councilor of the district, organized a county society. Dr. Jefferson L. Atkinson and James B. Buchanan, both of Campbellsville, were elected respectively president and secretary.

The physicians of Knox County met at Barbourville, March 23, and after an address by Dr. Steele Bailey, Stanford, secretary of the Kentucky State Medical Society, organized a county society. Dr. Benjamin F. Herndon was elected president, and Dr. Granville H. Albright, secretary, both of Barbourville. This society promises to have every physician in the county enrolled in its paid-up membership before the meeting of the state society.

The physicians of Pendleton County met at Falmouth, March 31. After an address by Dr. J. E. Wells, councilor for that

district, a society was organized with Dr. J. H. Barbour, Falmouth, president, and Dr. John E. Wilson, Falmouth, secretary. The constitution proposed by the American Medical Association was adopted without change, and it was promised that every physician in the county would be enrolled in the membership before the next meeting.

The physicians of Simpson County met at Franklin, March 30, and after a talk by Dr. J. N. McCormack, Bowling Green, organized a county society, which promises soon to enroll in its membership every physician in the county. Dr. George W. Duncan, Franklin, was elected president; Dr. Morton M. Moss, Franklin, secretary, and Dr. James C. Douglass, delegate to the state association.

The physicians of Spencer County met at Taylorsville, March 26, and after listening to a talk by Dr. J. N. McCormack, Bowling Green, organized a county society, electing Dr. Henry C. Mathias, president, and Dr. Wiley Rogers secretary, both of Taylorsville. All but three of the physicians in the county were present.

SOCIETIES.

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, FIFTY-FOURTH ANNUAL MEETING, NEW ORLEANS, MAY 3-8.

Tennessee State Medical Society, Nashville, April 14-16.
 Medical Association of Georgia, Columbus, April 15.
 South Carolina Medical Association, Sumter, April 15-16.
 Iowa State Medical Society, Sioux City, April 15-17.
 Mississippi State Medical Association, Vicksburg, April 15-17.
 Medical Association of the State of Alabama, Talladega, April 21.
 Medical Society of the State of California, Santa Barbara, April 21.
 Medical Association of the State of Missouri, Excelsior Springs, April 21-23.
 Kentucky State Medical Society, Louisville, April 22-24, 1903.
 Texas State Medical Association, San Antonio, April 28.
 Louisiana State Medical Society, New Orleans, April 28-30.
 Medical and Chirurgical Faculty of Maryland, Baltimore, April 28-30.
 Nebraska State Medical Society, Lincoln, April 28-30.
 Illinois State Medical Society, Chicago, April 29-May 2.
 Arkansas Medical Society, Jonesboro, April 30-May 2.
 Association of American Medical Colleges, New Orleans, May 4.
 American Proctologic Society, New Orleans, May 5.
 Kansas Medical Society, Concordia, May 6-9.
 American Academy of Medicine, Washington, D. C., May 11-12.
 American Therapeutic Society, Washington, D. C., May 11-13.
 Oklahoma Territorial Medical Association, Guthrie, May 12.
 American Association of Genito-Urinary Surgeons, Washington, D. C., May 12-14.
 American Surgical Association, Washington, D. C., May 12-14.
 American Orthopedic Association, Washington, D. C., May 12-14.
 American Pediatric Society, Washington, D. C., May 12-14.
 Association of American Physicians, Washington, D. C., May 12-14.
 American Medico-Psychological Association, Washington, D. C., May 12-15.
 American Ophthalmological Association, Washington, D. C., May 13-14.

Iowa State Medical Society.—The annual meeting will be held in Sioux City, April 15 to 17. At this meeting the adoption of the constitution suggested by the American Medical Association for state societies will be an important order of business.

Comanche County (Texas) Medical Society.—At the regular meeting held in De Leon, March 14, Dr. T. P. Weaver, De Leon, was elected president; Dr. Leven B. Thomas, Comanche, vice-president, and Dr. John D. Moorhead, De Leon, secretary and treasurer.

Breckenridge County (Ky.) Medical Society.—Physicians of Breckenridge County met at Hardinsburg, March 18, and effected a reorganization of the society, electing Dr. Robert T. Dempster, Glendean, president, and Dr. Milton Board, Jr., Hardinsburg, secretary.

Westchester County (N. Y.) Medical Association.—At the annual meeting held at White Plains, March 26, Dr. Thomas J. Acker, Croton-on-Hudson, was elected president; Dr. William D. Granger, Bronxville, vice-president, and Dr. Donald T. McPhail, Purdy Station, secretary and treasurer.

Shawnee (Okla.) Physicians' Club.—About 20 physicians of Shawnee met, March 26, and organized a medical society whose principal object is the building of a hospital in the city. Dr. John A. Walker was elected president; Dr. Hugh Goodwin, vice-president, and Dr. A. T. Grayson, secretary and treasurer.

Woman's Medical School Alumnae Association.—The twenty-third annual meeting of the alumnae of Woman's Medical School (Northwestern University) will be held April 29 in Chicago. The meeting has been so arranged as to allow the members to attend the meetings of the Illinois State Medical Society and the American Medical Association.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, held March 25, 1903.

The President, Dr. William A. Evans, in the Chair.

Pneumococcus Septicemia.

DR. J. L. MILLER said that bacteriemia was a more suitable term than septicemia. Whether an infection remains localized or becomes generalized depends largely on the resistance of the individual and the virulence of the infectious agent. The *Diplococcus pneumoniae* inoculated into a highly susceptible animal, as the mouse and rabbit, does not manifest itself as a localized process, but becomes a bacteriemia. In less susceptible animals, when inoculation is made directly into the lung, a process resembling pneumonia follows. Pathologic findings, animal inoculations and clinical observations indicate that pneumonia is often a septicemia before blood cultures actually demonstrate the organism. Two investigators report positive cultures from the blood in all cases examined; 154 cases collected from other reports show positive results in 24 per cent. The earliest positive results were obtained on the second day of the disease. Blood cultures will be of little diagnostic aid, as the disease is easily recognized from the physical findings. From a prognostic standpoint it is of value, a bacteriemia indicating a grave infection. Eighty-seven per cent. positive cases died, and only 22 per cent. of the negative cases.

The Diagnosis of Pneumonia.

DR. ARTHUR R. EDWARDS read this paper. He said that mistakes are rare in the diagnosis of primary frank pneumonia in adults. They occur mostly in the aged, alcoholics, children, and in pneumonia secondary to cancer, nephritis, diabetes, etc. Therefore, the physician should watch all diseases when the respiration, pulse and temperature rise, or when, even without these or other symptoms, the subject of chronic disease is not doing well. The onset symptoms, the chill in adults, convulsions in children, vomiting in the very young or in adolescents, suggest at least the possible onset of lobar pneumonia. Chill, pain in the side, sudden high fever and rusty sputum are almost positively final, since pneumonia is practically the only disease where they occur, guarding against the chief diagnostic confusion, infarct of the lung, in which the same symptoms may obtain, although here the sputum is reddish, but is not viscid, and is usually far more abundant than in pneumonia.

As to diagnosis from the physical findings in the lungs, these findings are usually detected in the frank case of pneumonia on a thorough thoracic examination, and, as a rule, appear within two days after the characteristic symptoms of onset. These physical findings were detailed and a table was presented differentiating pneumonia from effusive pleurisy.

Pneumonia in children occurs with an abrupt onset without chill (before the seventh year), but with vomiting or convulsions or other cerebral or meningeal symptoms. Cough is absent, since the bronchi are not involved; no sputum appears, and pain from the third to the fifth year, or, indeed, later, and also in adults, is referred to the abdomen, but without tenderness there. Pain is more important than increased respiration, which occurs with any elevation of temperature. Respirations number 80 under 2 years; in older children 50 or over. Crepitant râles are usually absent because of the superficial breathing caused by pain. Latency of signs is sometimes noted, as no bronchial breathing, no bronchophony, no dullness. Localization is more often central, in the upper lobes or migratory. Lysis is more frequent than in adults. In children pneumonia may be mistaken for abdominal disease, for pericarditis or brain affections. In alcoholics the disease is insidious, often without pain, cough or sputum, etc., and the lung symptoms may be overlooked, since the clinical picture of delirium tremens masks the signs of pneumonia.

Pneumonia secondary to tuberculosis, emphysema, arteriosclerosis, hepatic cirrhosis, nephritis, diabetes, typhoid influenza, diphtheria, anesthesia by ether, etc., is most frequently overlooked and the greatest care in chronic cases is necessary. Sudden death here and in general is often pneumonic.

Of other variations in the clinical course, the author mentioned the rarer forms, as abortive pneumonia, ephemeral pneumonia, relapsing or recurrent pneumonia. He discussed delayed or imperfect resolution; also local variations, massive pneumonia, etc., and as a final general statement he said that few diseases are recognized as easily as is fibrinous pneumonia, when careful consideration is given to its onset, symptoms, signs and evolution, and when, no symptom of pneumonia presenting, the patients with other disease are carefully, systematically and repeatedly examined.

Treatment of Pneumonia.

DR. JAMES B. HERRICK referred particularly to certain erroneous practices in the treatment of pneumonia, and argued for a simpler therapy and less free use of drugs. The expectant and symptomatic treatment is, for the present, seeing no specific remedy is known, the only rational one. The physicians can educate the laity to a knowledge of the self-limited nature of pneumonia, and a treatment as scientific as that in typhoid will be possible. He urged that oxygen be allowed to come in through the window, and not given entirely from the tank. No hard and fast rule as to diet should obtain; there should be individualization in this regard. Alcohol is seldom necessary. Hydrotherapy is proper for the reduction of temperature. Salt solution is of value, but its use ought not to be deferred until the patient is in extremis. Morphine is the best remedy to relieve pain and induce sleep, though it should, of course, be used with caution. Local applications are of doubtful value. They should not be so heavy or so light as to embarrass respiration. Bleeding is occasionally of benefit. The giving of many drugs for each trifling symptom is not indicated, and is often harmful. There is danger in the too free use of stimulants.

Discussion.

DR. EDWARD F. WELLS stated that he had collected series of cases from the literature, which have been recorded during the past one hundred years, this table embracing at the present time about 400,000 cases, with a mortality rate of 22 per cent. or more. He believes the mortality of pneumonia is understated rather than over-stated.

In speaking of the diagnosis of pneumonia mention is frequently made of central pneumonias and the difficulty attending the diagnosis of these forms of the disease. A patient in full health is stricken by disease which prostrates him. He may lack cough and expectoration, still there may be fever, which is usually present. The prostration, the increased respiratory ring, the presence of leucocytosis of a peculiar character, the leucocytosis being due to an increase of polynuclear cells, would make the diagnosis clear to his mind in many cases in which the physical signs are in abeyance. He called attention to one observation which he has made, namely, that in cases of delayed physical signs, in the so-called central pneumonia, when the signs appear, one would find that almost invariably they are a little in front and just below the angle of the scapula. Casts are frequently found in the urine in pneumonia. Granular casts of pneumonia are remarkably uniform in size. He believes patients are usually fed too much in pneumonia. Pain in pneumonia declines in about three days, or subsides, regardless of what is done to relieve it.

DR. E. FLETCHER INGALLS said the importance of not cutting off air is a point that should be impressed on all physicians in treating pneumonia. Pneumonia patients should not be fed in a routine manner. The proper administration of food is often neglected, and physicians frequently overlook the matter of feeding of the patient. He agreed with the essayist that opiates must be given if pain can not be relieved in some other way. Ordinarily, he believes bromid of ammonium will relieve insomnia if the drug is given early enough.

DR. WALTER M. FITCH asked whether the antitoxin of pneumonia was of any value. Also, whether nuclein preparations

are of any value in pneumonia other than producing a leucocytosis.

DR. EDWARD H. OCHSNER spoke of systematic strapping of the affected side in cases of pneumonia. In the great majority of cases that are thoroughly strapped early in the disease, the pneumonia disappears by lysis and not by crisis. His explanation is that the intoxication is not so sudden and severe, and it gives the patient a chance to produce immunity before he is completely intoxicated so as to cause death.

DR. M. HERZOG stated that pneumococcus septicemia is difficult to diagnose, but that this difficulty is largely done away with if a blood examination is made early, and attempts made to obtain pure cultures of the pneumococcus in the blood.

DR. B. W. SIPPY stated that cases that have the normal number of leucocytes, or less, were more likely to run a serious course.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, March 19, 1903.

The President, Dr. Andrew H. Smith, in the Chair.

Fetal and Infantile Typhoid Fever.

DR. J. LOVETT MORSE, Boston, said that conclusions could not be considered trustworthy that were founded on cases in which the diagnosis of typhoid fever had not been confirmed by a positive Widal reaction or the finding of the typhoid bacilli. Of fifteen cases, proved by autopsy and cultures to be genuine typhoid, ten were born dead or died at birth. Several persons had succeeded in proving experimentally the possibility of bacilli passing through the placenta, though it was not yet definitely known whether this could occur in a healthy placenta. Of twelve cases in which the organs were examined, the spleen was enlarged in four; in one there were healed ulcers and enlarged mesenteric glands; in one there was marked swelling of the liver with hemorrhages beneath its capsule. Intestinal lesions were not found in cases of intrauterine typhoid unless the infant lived for some time after birth. Infection of the fetus was not a necessary result of typhoid in the mother. The high mortality was explained by the septicemic nature of the infection. Statistics seemed to show that typhoid was uncommon at the age of 2 years, and that when it did occur at this early age it was in connection with other cases in the same house, or as a part of a large epidemic, thus suggesting that repeated exposure to severe infection was necessary for its production. Of thirty-two cases, twenty-three gave a positive Widal reaction, five were diagnosed positively by a bacteriologic examination, while in four cases both methods were employed. Sixteen of these cases giving a mortality of over 50 per cent. Of these sixteen, a typhoid eruption was present in sixteen, eleven showed abdominal distention, nineteen had diarrhea and five constipation.

Occurrence of Typhoid in Infants and Young Children.

DR. J. P. CROZER GRIFFITH, Philadelphia, presented this paper. He said the opinion was gaining ground that typhoid was not rare in infancy and childhood, and he had personally reported eighteen cases occurring in infants under two years and a half. Its onset and course were less characteristic than in the adult, and there was a tendency for the nervous symptoms to overbalance the intestinal symptoms. Walking typhoids were very common among these little patients. Vomiting was a comparatively common initial symptom, and epistaxis occurred about as often as in adults. Abdominal pain was common, rose spots were present in the majority of cases, and the spleen was probably always enlarged. Desquamation often occurred, but there was nothing characteristic about it. Meningeal symptoms were often so marked as to confuse the diagnosis. The rise in temperature was rapid, with but little variation between the morning and evening, and the final fall was often so sudden as to appear critical in type. Both the mesenteric and the solitary glands were enlarged and elevated, but the tendency to intestinal ulceration was slight, which apparently explained the short duration of the disease. The value of the Widal reaction was inestimable in doubtful

cases occurring among infants and young children, but the failure to obtain this reaction did not necessarily exclude typhoid. It was particularly difficult to differentiate between influenza and typhoid. Intestinal hemorrhage was an infrequent complication and intestinal perforation was a great rarity. Relapses occurred about as often as in adults. Of 137 cases occurring in the Children's Hospital in the ten years prior to 1898 the mortality was 2.9 per cent., and in 295 cases occurring since 1898 it was 6.7 per cent. On the other hand, in a large series of cases of typhoid occurring in infants under two years and a half the mortality was 51 per cent. The Brand baths could not be fully employed in young children; even a plunge at 85 or 90 F. was often not well borne. Sponging should be tried first, and, if not sufficient, resort should be had to the graduated bath, beginning with a temperature of 90 and cooling it down to 85 F.

Symptoms and Etiology of Typhoid in Children.

DR. A. D. BLACKADER, Montreal, read this paper. He said that hand to hand infection was particularly prone to occur among young children. Out of 398 cases entering the Montreal General Hospital since 1900, 4 were below the age of 5 years, 19 were between 5 and 10, 32 were between 11 and 15, 89 were between 16 and 20, and 92 between 21 and 25 years of age. Only 3 cases occurred in persons over 50 years old. Of 100 cases reported by him in 1900, 4 were under 2 years, 13 were over 2 and under 6, 40 were over 6 and under 11, and 43 were over 11 and under 15 years old. The disease in children was milder in type and shorter in duration than in adults. The onset sometimes simulated pneumonia, but usually it was insidious. The temperature curve was usually atypical, and the continued fever of short duration. Abortive cases were not infrequent. The mortality was low; only one death occurred in his series of 100 cases, and in 50 consecutive cases in hospital there were only three deaths. Death usually was caused by some intercurrent affection. About the end of the first week the spleen could usually be palpated, and the typhoid roseola would be found in a large proportion of cases between the tenth and fourteenth days. Large echymotic spots on the skin justified an unfavorable prognosis. The pulse was usually rapid, but dicrotism was hardly ever observed in children under 10 years old. True meningitis in the course of typhoid was extremely rare. Ehrlich's diazo reaction, when present, was often an early help to diagnosis. The Widal reaction should be looked for every second day in doubtful cases. It was frequently not positive until after the tenth day.

Discussion.

DR. L. EMMETT HOLT said that Dr. Griffith's opportunities for observing typhoid in infancy and childhood were exceptional. For example, in his hospital service at the Babies' Hospital, although examinations for the Widal reaction and cultures were made as a matter of routine in cases of continued fever, only three cases of typhoid fever had been encountered in a period of fourteen years. Undoubtedly typhoid was more a nervous than an intestinal disease in infants, and, hence, it was well to think of typhoid in every suspected case of meningitis. He had seen two or three cases in which the typhoid eruption was so profuse as to lead to the diagnosis of measles.

DR. W. P. NORTHRUP spoke of the great rarity of typhoid fever in infants, as shown by the fact that not a single undoubted case of this disease had been encountered at the New York Foundling Hospital in twenty-eight years. Moreover, Dr. Griffith had only succeeded in collecting from the literature of the whole world a comparatively insignificant number of cases.

NORTHWEST MEDICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, held March 3, 1903.

President Dr. William Egbert Robertson in the Chair.

The retiring president, Dr. Wendell Reber, made an address, in which he reviewed the work of the society during the past year.

The Early Diagnosis of Pregnancy.

DR. J. J. GURNEY WILLIAMS directed attention to the frequency with which this condition is overlooked during the

first ten weeks, owing to the atypical symptoms presented. He recommended careful bimanual examination and observation of both the objective and the subjective signs. In the majority of cases he feels that the patients are led to consult the physician on account of the amenorrhea, for which there are many other causes than pregnancy, which causes he considered under three heads: 1. Those cases in which menstruation has never taken place, which, he felt, was most likely to be caused by some defective development of the uterus or ovaries or some constitutional states, such as chlorosis, anemia or phthisis. In many of these cases menstruation does not begin until the assumption of marital relations.

2. In the second and the largest class of cases the menstruation has been suppressed. Previous regularity or irregularity and a history of any pelvic operations should be considered, as even dilatation and curettement may cause one or two periods to be missed.

3. In the third class the blood is retained within the uterine cavity or vagina, as from atresia or imperforate hymen, and a physical examination will reveal the condition. Among the various causes for the suppression of menstruation are change of climate, as the country girl coming to the city and starting to work in a mill, fear of illicit pregnancy, desire for offspring, great mental activity, catching cold or getting the feet wet just prior to an expected period. The use of bromids in epilepsy is also said to cause this condition, and two cases had come under the author's observation which had suffered from amenorrhea for two months after using a mixture of zinc sulphate and digitalis "to prevent smallpox." Supra-involution following labor or miscarriage and injections to prevent conception may also cause this condition, and, as a point of diagnostic import, it should be borne in mind that amenorrhea arising from any other cause than pregnancy usually manifests itself in some constitutional disease, such as anemia, general debility and weakness.

The mammary signs are not constant and often misleading, but in pregnancy the nipple is usually more prominent, the areola darker, and Montgomery's tubercles enlarge, and if, in combination with these symptoms, there is frequent micturition, this is a valuable adjunct to diagnosis. Nausea varies greatly in time and severity.

The author felt that the most important reliable objective symptom is the change in the shape of the uterus, which in the virgin is pyriform, but when pregnancy occurs the fundus rapidly enlarges and changes in form, and, as this examination can only be made between uterine contractions, repeated examinations may be necessary to find the uterus at rest. Hagar's sign in conjunction with the other symptoms is very valuable after the second month; softening of the cervix is not constant and may be caused by metritis. The bluish discoloration of the vagina just posterior to the urethra can be observed as early as the fifth week and is of considerable value, and when produced by a fibroid or pelvic congestion is of a lighter blue. A cervix lower than normal and increase in weight of the uterus are important symptoms, and salivation, stimulated or perverted appetite, a feeling of drowsiness and constipation are common symptoms, although valueless except in conjunction with others.

In regard to the diagnosis of ectopic pregnancy, in every case in which there is vaginal bleeding, or abdominal or pelvic pain, and the woman is presumably pregnant, a careful bimanual examination should be made, as the cases of this condition in which the diagnosis is not made are those which do not present the typical symptoms, such as sudden onset of pelvic pain, accompanied by a bloody discharge, with shreds, a leaky skin, rapid pulse and, probably, tympanites.

Discussion.

DR. WALTER F. WOODS directed attention to three classes of cases, in which he had found it exceedingly difficult to make an authentic early diagnosis of pregnancy: 1, Pregnancy occurring during lactation; 2, amenorrhea occurring during the progress of some debilitating disease; and 3, where the patient

intentionally tries to deceive the physician. The cause of the difficulty in the first group is that the uterus is somewhat involuted following delivery, requiring from six weeks to three months to return to normal, and if amenorrhea occurs during this period, the abnormal position of the uterus is apt to conflict with the differential diagnosis. In the second class of cases, it is necessary to study all the symptoms which the primary disease might produce and make a diagnosis chiefly by exclusion. Cases of the third class require careful investigation, as they are prone to give a false history of the menstrual periods and other symptoms. The patient's history should be carefully noted and considered in conjunction with the physical examination, which should be made in all cases, and a familiarity with the patient's habits, mode of thought and the physical condition of her genital organs is of value, which places the family physician in a better position to make the diagnosis than one who is called in for that especial purpose.

The nervous phenomenon manifested should be given consideration, as in many instances a naturally nervous patient will become of a composed temperament during the first few weeks of pregnancy, and one who usually has a placid disposition will frequently become very irritable. The reflex gastric disturbance which may occur at different times during the day is a valuable symptom, and usually before the morning sickness appears there is an undue craving for certain articles of food, while the appetite, as a whole, may remain about normal. In many instances flesh is assumed quite rapidly. To the family physician who is familiar with the shape and position of the patient's uterus, the change in the position and size during the first few weeks of pregnancy may be an important aid in diagnosis. Another important factor is the softening of the cervix, and, while this occurs at each menstrual period, it disappears shortly thereafter unless a pregnancy has taken place, in which event it is continuous. This sign is especially valuable in primipara, while in multipara the variation in the cervix from lacerations, etc., frequently obscures the Hagar sign. The condition of the mammary gland, such as deepening of the color of the nipple and enlargement and pricking sensation in the gland are signs which should be studied in conjunction with the others.

One of the most valuable signs, he considered, was the irritable bladder, and, although the menstruation frequently causes a more frequent desire to pass urine, the condition is continuous if caused by pregnancy. The purplish or bluish condition of the vagina should be looked for, and although this may be brought about by pathologic states, it usually occurs earlier in pregnancy than in the other conditions, the reason being that in pregnancy the blood is brought to the uterus primarily, while the pathologic conditions simply dam up the blood in the uterus so as to produce this sign. Shaeffer's sign, he stated, he had never been able to demonstrate.

DR. J. THOMPSON SCHELL viewed as the most important symptom the marked antelexion of the uterus which is usually present. He felt that by carefully considering the added weight to the uterus, the increased amount of vaginal and cervical secretion, with beginning softening of the cervix, the fact that the cervix is generally partially prolapsed, the uterus further down in the pelvis and heavily supported, and by careful vaginal and rectal examination and the so-called Hagar's sign one can say that the woman is probably pregnant. The beginning of a violet color in the vagina later becoming blue is of value, and by three or four examinations, at intervals of a week, the diagnosis should be made with reasonable certainty.

In ectopic pregnancy, an early diagnosis is of vital importance, and this condition may exist without the presence of any of the customary signs, and the only symptom may be shock. It was recommended that in all cases where the patient complains of amenorrhea, pain in the abdomen and a little leaking from the vagina, that she be examined under an anesthetic. A case was reported of a woman who had been married for a number of years; had been sterile for seven years, and up to one month prior to the time she was seen

had menstruated regularly without pain, at which time she missed a period. There was some pain in the lower portion of the abdomen, but no great evidence of shock and her temperature was normal. An examination under an anesthetic was decided on, a vaginal examination made, and an ectopic pregnancy discovered.

In regard to Shaeffer's sign, it was considered absolutely unreliable, except in conjunction with other symptoms, and in the majority of cases was believed to be absent.

DR. SAMUEL WOLFE believed it practically impossible to make a positive diagnosis in the early months, but felt that the family practitioner who was more or less familiar with the physical condition and history of his patients could generally be fairly certain of his diagnosis.

DR. W. WAYNE BABCOCK reported cases, the first of which was a woman who had been sterile for eight years, and had been operated on for laceration of the cervix, after which she developed retroversion of the uterus, which gave her a great deal of trouble, operation being advised to relieve this condition. This was, however, deferred for a number of months, and finally she missed a period and passed eight weeks over her time, when an examination revealed the uterus in a retroflexed position, with the fundus very large and soft and the cervix very small, leading to the conclusion that she was pregnant. On re-examination a week or two later, the mass was found to be somewhat larger, but, by feeling carefully, could be felt what appeared to be the normal fundus, and a division was apparent between the mass behind the uterus and the cervix. Pain in the pelvis was complained of and a week or two later, extra-uterine pregnancy being suspected, an operation was suggested. On opening the uterus what was supposed to be the fundus of the uterus was found to be a small fibroid, the whole uterus being studded with fibroids and, as they were directly in the path of the child and were growing rapidly, the whole organ was removed.

Another woman had been wearing a stem-pessary for two years to prevent conception, removing it during the menstrual period. The pessary was slightly longer than was necessary. She complained of constant bleeding, which she seemed unable to stop. She had a distinctly enlarged and soft uterus, but pregnancy was not thought of. A curettement was done, and the character and amount of material removed indicated that a pregnancy had taken place, in spite of the precaution, which the speaker thought would create a good field for the development of malignant disease.

DR. WILLIAM L. PEPPER stated that he had frequently noticed that women in whom sexual desire is very great before pregnancy will lose all desire during gestation, while those in whom sexual desire is not usually so great, will become abnormally sexually excited during pregnancy.

DR. J. EDWARD WALLIS felt that there were no signs sufficient to make a positive diagnosis until the end of the third month.

DRS. L. C. PETERS, I. C. GERHARD, W. H. THOMAS and HUGH P. MCANIFF also took part in the discussion and reported cases. One of these was of menstruation throughout pregnancy, others were of difficult diagnosis in wasting diseases.

DR. CARLE LEE FELT reported the case of a woman who had borne three children, examination after the birth of the third child revealing laceration of the cervix. A curettement was done, and a short time afterward she stated to her physician that she was two months pregnant. Seven months after this she was delivered of a full term child, which proved that she must have been pregnant at the time of the operation.

DR. J. H. GURNEY WILLIAMS stated that he had made a number of observations with the urine of pregnant patients, and had found that after the first twenty-four or forty-eight hours a skin-like substance would form on the top of the urine, and if it was held up to the light particles could be seen rising therefrom. This he had not observed in any urine except in cases of pregnancy. The history and symptoms he believed to be practically worthless, unless confirmed by the examination. Pinkish vaginal discoloration just posterior to the urethra is a sign of considerable value.

The vaginal incision in ectopic pregnancy is not wise, as in the majority of cases it necessitates two incisions in order to control the hemorrhage.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns without allusion to inquirer.]

Pruritus.

Leredde, in the "Journal des Praticiens," advocates the use of acetic acid in the following combinations:

R.	Acid. acetic.....gr. xx	130
	Lanolin. 3i	4
	Vaselin. 3iii	12

M. Sig.: Apply locally; or:

R.	Acid. acetic. gr. xx	130
	Vaselin. 3ii	8
	Lanolin. 3iii	12
	Pulv. amyli, aa.....3iii	12

M. Sig.: Paste; apply locally.

He also suggests the use of carbolic acid in one to three per cent. solutions on compresses.

Tincture of benzoin may also be employed in the following combination:

R.	Lanolin. 3i	30
	Vaselin. 3iv	15
	Aque 3i	4
	Tr. benzoini...3i	4

M. Sig.: Ointment; apply locally.

Camphor is an excellent anti-pruritic and may be used in either of the following prescriptions:

R.	Chloral hydratis.....gr. xv	1
	Linimenti camphoræ.....3ii	8
	Lanolin. 3iii	90

M. Sig.: Ointment; apply locally; or:

R.	Zinci oxid.	
	Cretæ	
	Linimenti camphoræ	
	Aq. calcis, aa.....3vi	25

M. Sig.: Apply locally.

The author also recommends a weak watery solution or ointment of ichthyol, one or two drams to the ounce. He has also found resorcin a remarkable anti-pruritic when employed in watery or alcoholic 2 to 5 per cent. solution.

Cough.

A prescription which has proved valuable, especially in case of young children, is as follows:

R.	Codein. sulphatis.....gr. vi	40
	Sp. aeth. nitrosi	
	Syr. ipecac., aa.....3ii	8
	Syr. lactucarii (Aubergier) q. s. ad...3iii	90

M. Sig.: Half teaspoonful to one teaspoonful as required for cough.

In the irritating cough which so often follows influenza the following preparation is recommended in the "Canadian Journal of Medicine and Surgery":

R.	Heroin. hydrochloratis.....gr. iii	20
	Syr. acaciæ 3vi	25
	Aque q. s. ad.....3iv	120

M. Sig.: Two teaspoonfuls 3 or 4 times a day.

Alcohol in Fevers.

Martinet, in "La Presse Médicale," gives a formula which is intended to serve as a guide in the rational administration of alcohol in fevers, whereby the tissue waste may be forestalled:

R.	Tr. cinnamomi.....3i	4
	Sp. sacchari (old)	
	Syr. simplicis, aa.....3iii	90
	Aq. tilæ (Linden water) 5x	40

M. Sig.: Tablespoonful every two hours.

The "Canadian Journal of Med. and Surg." recommends this editorially and urges that it certainly would be satisfactory to

the practitioner, and should be in the best interests of the patient and his family, if alcohol, accurately measured according to the requirements of the individual, were administered as carefully as any other medicine. If the patient has scruples against liquors, medicinal dosage, as in the prescription quoted, may avoid unpleasantness.

Carbolic Acid for Erysipelas.

Seneca D. Powell, New York, applies 95 per cent. carbolic acid in erysipelas, and as soon as the skin turns white he applies alcohol to check the action. Large surfaces may be thus treated without harm. Temperature and other symptoms are rapidly and markedly alleviated. This treatment also lessens the danger of infection to others.

The "Dietetic and Hygienic Gazette" describes another treatment for erysipelas. It is to cover the area and a margin on the surrounding skin with a thick layer of white vaselin, cover this with linen and bandage to hold it in place. Apply twice daily. Its advantage over iodine applications is the absence of pain and irritation.

Removal of Odors from Hands.

Dr. Powell also recommends carbolic acid to remove the foul odors that cling to the hands after opening abscesses or after work in autopsies. The acid should be used in the strength of a dram to the ounce of water.

Typhoid Fever in Infants.

J. P. Crozer Griffith, in the "Medical Record," says: The bath method of Brand carried out with exactitude is not applicable to young children. Even a tepid plunge of 85 or 90 F. is often not well borne by older children. His custom is to employ sponging first, because it is often sufficient; if not, a graduated bath is used, beginning at 90 F. and cooling it down to 85 F. This is the safer plan. Sometimes a warm bath of 95 or 100 F. is useful, and the same is true of the abdominal ice-bag. Hydrotherapy should never be used in young children as a necessary routine, and the prolonged sponging of a struggling child is neither useful nor judicious.

Codein in Insanity.

In a recent Paris thesis by Jules Clausse, says the "N. Y. Med. Jour.," the author sets forth the great advantages of the employment of codein as a calmative in cases of melancholia and in those of any psychical disturbance characterized by derangement of the general sensibility, by anxiety, and by moral suffering. Its effect, he says, is soon manifested in the improved facial expression and the subsidence of the feelings of moral anguish. For melancholiacs it is the hypnotic par excellence, since it overcomes the causes of their sleeplessness. Moreover, it is devoid of the unpleasant after-effects of opium and morphin. It does not diminish the secretions or cause constipation or the impairment of appetite or the unpleasant sensations on waking that opium and morphin are prone to give rise to. The dose, however, must be scrupulously regulated to suit the case, and the drug is positively contraindicated in cases of intense excitement and in maniacal conditions.

A Mouth Wash.

Pruyn recommended to the Illinois Dental Society the following as a mouth wash:

R.	Boracic acid 3iii	12
	Oil cassia	
	Carbolic acid	
	Chloroform, aa.....3i	4
	Alcohol 3iiiss	105
	Oil peppermint, ...drops x	
	Glycerin, to make.....fl. 3viii	240

M. Sig.: Add one-half teaspoonful to one-half glass tepid water as a mouth wash.

This is recommended in inflammation of the mucous membrane wherever located, but if used through the nose it should be weaker than for a mouth wash.

The Abuse of Lavage of the Stomach.

The "N. Y. Med. Jour." says: New therapeutic measures that in the least answer the purposes they are alleged to serve are too apt to be carried to extremes, and it is well when modera-

tion in their employment is advised. This may be said, we think, of lavage of the stomach. It is not always the innocent procedure that it passes for, as it occasionally gives rise to collapse. It should be resorted to only on definite indications and employed in moderation.

Influenza.

Hare's text-book on therapeutics, last edition, gives a valuable summary of the treatment of influenza. Some of the suggestions are as follows:

To abort the attack in first few hours:

R. Tr. aconit. rad.....	3ss	2|
Spts. ætheris nitrosi.....	3iii	4|
Potassii citrat.....	℥iii	4|
Aquæ q. s. ad.....	5i	30|

M. Sig.: One teaspoonful every four hours, during first day of the attack.

For the irritative cough in first stage:

R. Tr. benzoini comp.....	3i	4
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Sig.: Add to one pint of boiling water, and inhale the steam.

For the cough in the height of the attack:

R. Ext. cannabis ind.....	gr. 1/4-i	015-6
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Or:

R. Codeinæ sulph.....	gr. 1/4-i	015-6
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Sig.: Every three or four hours.

For the bronchitis in the early stage:

R. Vini ipecac.....	3ii	8
Potassii citratis.....	3ii	8|
Syr. pruni virg.....	3ii	60|

M. Sig.: One teaspoonful every two hours.

For the bronchitis in the later stages:

R. Ammon. chlor.....	gr. xl	3|
Tr. cubebæ.....	5i	30|
Syr. pruni virg. q. s. ad.....	5iv	120|

M. Sig.: One tablespoonful every three hours.

For the insomnia:

R. Chloral hydratis.....	gr. xv	1
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Or:

R. Chloralamid.....	gr. xxx	2
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Or:

Sulphonol.....	gr. xx	1 3
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Sig.: At one dose.

For stimulation, throughout the attack:

R. Strychninæ sulph. up to .03 (gr. 1/20).

Sig.: Every four hours. (It is preferable to use smaller doses more frequently, e. g., gr. 1/40 every two hours.)

For the vertigo and dizziness:

R. Ext. ergotæ fld.....	3ss	2|
Sodii bromidi.....	gr. xx	1|4

M. Sig.: Take at one dose; repeat q. 3 hours.

For the constipation in the early stages:

R. Castor oil.....	3ss	15
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Or:

R. Magnesii sulph.....	3ss	15
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Or:

R. Magnesii citratis.....	3ss	15
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Sig.: at one dose.

For the constipation after the attack: One teaspoonful of fluid extract of cascara at night.

Anders suggests for the laryngobronchial irritation of influenza:

R. Codeinæ sulph.....	gr. iv	25|
Ammon. chloridi.....	℥xv	20|
Syr. pruni virg.....	5ii	60|
Spts. junip. comp. q. s. ad.....	5iv	120|

M. Sig.: One teaspoonful every two or three hours.

The Internal Uses of Potassium Permanganate.

A. Khoury reports, in the "Jour des Praticiens," as quoted by "Amer. Med.," four patients with painful dysmenorrhea who were cured, and three patients with anemia greatly improved by the administration of potassium permanganate. It was given in doses of from 5 centigrams to 0.26 gram. (5/6 to 4

grains) usually in pills, which have the advantage of not staining the mucous membrane of the mouth. In all cases this drug was well borne by the stomach. It caused no constipation or diarrhea; in only one case was the urine tinted a light pink. Menstruation does not counterindicate its use.

Medicolegal.

Reading or Proving Contents of Medical Works to Jury.—

The furthest that the Supreme Court of Illinois has gone in respect to reading medical works to the jury, the Appellate Court of Illinois, First District, says, is to hold that if an expert bases his opinion on the work of an author, the work may be read in evidence to contradict him. And if it would not have been competent for counsel to produce and read to the jury medical books, much less was it competent, the Appellate Court holds, in the case of the Chicago City Railway Company vs. Douglas, to attempt to prove the contents of such books by witnesses testifying solely from memory. The testimony of medical expert witnesses as to what others had written or spoken in regard to the subject matter of the inquiry, was mere hearsay, and incompetent.

Care of Soldier in Private Infirmary.—The case of Davis vs. United States was brought in the United States District Court in Alabama to recover the reasonable value of the board, lodging, medicines, medical attention and nursing of a soldier in the service of the United States who was taken ill with typhoid fever and was by the direction of his captain conveyed to a private infirmary for medical treatment and attention, there being no army surgeon near the place whose medical services could be obtained for him, and no army hospital to which he could be sent. Section 1452 of the army regulations, promulgated Oct. 31, 1895, provides that: "When medical attendance is required by an officer or enlisted man on duty, and the attendance of a medical officer can not be had, the officer, or if there be no officer present, then the enlisted man may employ a civilian physician, and a just account for his services and the necessary medicines will be paid by the medical department." Section 1457 provides that "accounts for board, lodging, nursing and medical attendance of sick soldiers in private hospitals will be sent to the surgeon-general for settlement." But in this case there was no valid express contract, as required by act of June 2, 1862, for the services rendered. However, the court is of the opinion that the captain acted within the line of his authority under the army regulations, in sending the sick soldier to the infirmary, from which there arose on the part of the United States government an implied contract to pay the fair value of the services rendered, as claimed.

Not Required to Have Limb Rebroken and Reset.—In the malpractice case of Morris vs. Despain, where a judgment for damages is affirmed by the Appellate Court of Illinois, Second District, a woman 69 years of age, in good health, fell and suffered an oblique fracture of the left femur, two or three inches below the hip joint. Two physicians attended her. They reduced the fracture and put on a roller splint. When they discharged her the injured limb was inverted or turned in toward the other, according to her proof, ninety degrees, but according to that of the physicians only twenty-five or thirty degrees. She claimed that the condition of her leg was brought about by careless and unskilful treatment. The physicians claimed that they exercised care and professional skill, and that what they did was good practice; that prior to the use of the fracture box they desired to use a system of weights to avoid the injury complained of, but that the patient would not permit them to do so, and that she also disobeyed their instructions. Two trials were had; the first resulting in a verdict for \$1,000 damages; the second for \$950. On the questions whether she obeyed instructions, and whether the treatment pursued was the proper treatment to prevent inversion or not, the court says that the evidence was in hopeless conflict, but that there was abundant to sustain the verdict. After the union between the bones was complete and the patient had discovered the condition of her leg, she requested that an-

other physician be called in. This physician being called, advised that the only way by which the limb could then be straightened would be by breaking the bone and resetting it, but this the patient declined to allow to be done. The trial judge gave an instruction for her which told the jury that even though they should believe, from the evidence, that the limb might have been straightened by being broken again and reset, yet if the evidence showed that by reason of the want of ordinary care and skill on the part of the two physicians, the limb was permitted or caused to be crooked, and that ordinary skill and care on their part would have avoided the injury, her refusal to have her limb rebroken and reset was no defense to any injury caused by their want of ordinary skill or care. The Appellate Court holds that the instruction was properly given. It holds that she was not required to submit to have her limb rebroken in order to relieve them from liability for lack of ordinary care and skill. Moreover, there was evidence tending to show that such an operation would be attended with great pain and that at her age and in her physical condition there was great danger that it would prove fatal to her. The law did not require her to risk such danger before she could sustain her suit.

Mississippi Medical Practice Act and Osteopathy.—In the Mississippi case of *Hayden vs. State* the former party was indicted for practicing as a physician without first having been examined and obtained a license so to do. The admitted facts were that he was a graduate of a school of osteopathy and practiced it. That in treating diseases, and in his treatment of the witnesses for the state in this case he did not use any drug or medicine, but his treatment consisted of manipulating scientifically the limbs, muscles, ligaments and bones which were pressing on the nerves of the blood supply. This treatment was had so that Nature would have free action. That in his treatment of diseases or pains he was confined solely to his manipulation as above described. That for said services to said witnesses he received pay. That the witnesses were being treated for rheumatism, and claimed that they had entirely recovered as a result of that treatment. The circuit judge instructed the jury that, if they believed the admitted facts, they should convict the party. This they did, and thereon the judge imposed a fine of \$20 on him. The Supreme Court of Mississippi says that the sole question was whether, under Chapter 68, Acts 1896, an osteopath is required to be examined and licensed for the practice of his branch of the healing art. The act of 1896 provides: "That the practice of medicine shall mean to suggest, recommend, prescribe or direct for the use of any person, any drug, medicine, appliance or agency, whether material or not material, for the cure, relief or palliation of any ailment or disease of the mind or body, or for the cure or relief of any wound or fracture or other bodily injury or deformity or the practice of obstetrics or midwifery, after having received, or with the intent of receiving therefore, either directly or indirectly, any bonus, gift, profit or compensation." It was perfectly manifest, the court thinks, from the agreed statement of facts, that the party used neither drug nor medicine, as meant by the act. It was equally manifest that the legislature, by the use of the words "appliance and agency," did not intend to include such treatment as he gave the state witnesses. Continuing, it says that its attention has been called to no statement of osteopathic treatment in all the literature on this subject which characterizes the treatment of an osteopath of his patient as an appliance or agency. There is an incongruity in such application of such words. Osteopaths themselves do not speak of their manipulation of the nerves, ligaments, bones and other parts of the human body as being agencies or appliances of any sort or in any sense. In any strict and proper use of such words they can not be so denominated. If one not an osteopath directs a blow at their art it is becoming that he use a term of description not to be mistaken. The Supreme Court concludes that the act of March 19, 1896, was not intended to regulate the practice of osteopathy in Mississippi. It says that the course of study and examination prescribed in the law of that state on this subject seems to mark it out as curriculum of the allopaths. It at least suits them in many respects, but its

chemistry and materia medica are not specially adapted to assist the practice of osteopathy. They make no use of the immense learning contained on these subjects, so highly valued by the regular physician. It appears to the court that the Mississippi legislation on the subject of the practice of medicine has been framed by the allopaths to suit their views of the medical art, and with the laudable design of excluding from the practice the unskilful and the ignorant; and it was not intended to set up a universal standard of therapeutics, from which none could depart. Courts in other jurisdictions where similar statutes prevail have led the way for the decision in this case. And the court says that while its own views of the subject would probably have led it to the conclusion it has reached, yet, if the case had been otherwise, it should have felt itself strongly constrained by the authority and reasoning contained in them. It refers to *State of Ohio vs. Liffing*, *State of Rhode Island vs. Mylod and Nelson vs. Board* (Kentucky). Alabama, with a statute widely divergent from that of Mississippi, it says, holds another view. But *Bragg vs. State of Alabama* sheds no light on the construction of the Mississippi statute. It adds that a wise legislature some time in the future will doubtless make suitable regulations for the practice of osteopathy, so as to exclude the ignorant and unskilful practitioners of the art among them. The world needs and may demand that nothing good or wholesome shall be denied from its use and enjoyment.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

March 23.

- 1 *The Psychic Nature of Some Disturbances of the Acts of Urination and Defecation. Charles J. Aldrich.
- 2 *The Prevention and Outdoor Treatment of Pulmonary Tuberculosis. Frank Warner.
- 3 Postpartum Subinvolution. James E. King.
- 4 *Course of Diseases During Pregnancy. E. Castelli.
- 5 *Gastroparesis and Gastrectasis. E. S. Fogg.
- 6 A Diagnosis by Postmortem Laparotomy. C. A. Drew.
- 7 Glimpses of the Practice of Medicine and Diseases in the West Indies. (To be continued.) Nicholas Senn.

1. **Psychic Disorders of Urination, Etc.**—In this article Aldrich reports a number of cases of curious psychic embarrassment connected with the acts of urination and defecation, the latter being far less frequent than the former. He thinks innate modesty may be sufficient to explain the condition in some of these cases, but others are not so readily explained.

2. **Tuberculosis.**—The subject of tuberculosis is reviewed by Warner, who notices the theory of its contagion, though with proper care, this can be of but little importance. The lowering of vital resistance is undoubtedly the greatest cause of vulnerability to the infection which few altogether escape. He reviews the various methods of treatment, and notices the arguments that would make bovine tuberculosis infectious to human beings. There is a good deal of hopefulness in Behring's antituberculosis vaccination, though as yet it is too early to decide in regard to its efficacy.

4. **Diseases of Pregnancy.**—Castelli reviews the circulatory and heart lesions that may be associated with pregnancy and thinks that the physiologic condition may possibly explain the tendency to primary heart lesions, hence, we should adopt prophylactic measures during pregnancy to guard against their possibility. The patient should have a great deal of rest, especially if weak and anemic, and lack of exercise must be substituted by massage. To counterbalance the impaired respiratory power of the blood corpuscles and the consequent hemolysis, a cytogenic treatment could be adopted during the last months of pregnancy. The influence of pregnancy on any co-existing heart disease is also noted. It renders the existence of these disorders more serious and often disastrous. He would be inclined to advise against marriage more in case of mitral than aortic lesions, not giving harsh opinions, but talking sensibly to the patient, showing the dangers, prescribe a program of life, and if necessary, caution her against child-

bearing. If the cardiac troubles become dangerous to the life of the pregnant woman labor should be accelerated or brought about prematurely. In conclusion he speaks of the varicose veins of the pregnant condition.

5. **Gastroptosis and Gastrectasis.**—In these conditions Fogg thinks the two operations most rational and efficient are the Beyer operation in gastroptosis and gastroplication for gastrectasis. He reports a successful case of the former.

New York Medical Journal.

March 23.

- 8 Syphilitic Pseudotubercles—Report of a Case; the Differential Diagnosis of Tubercles. (To be concluded.) Joseph Collins.
- 9 *Streptococcus and Staphylococcus Bronchitis. Joseph M. Patton.
- 10 *Intestinal Resection and End-to-End Anastomosis, with the O'Hara Forceps, in a Case of Tubo-ovarian Abscess with Appendicitis; Recovery. George G. Ward, Jr.
- 11 *The Special Dispensary as a Factor in the Combat of Tuberculosis as a Disease of the Masses. S. A. Knopf.
- 12 *Opium in Surgery. Edward W. Lee.
- 13 *Retinoscopy. Daniel H. Wiesner.
- 14 *On the General Characteristics of Corneal Astigmatism. H. Davison Saril.

9.—See abstract in THE JOURNAL, Feb. 14, p. 464.

10. **Intestinal Resection.**—Ward reports a case, calling attention to the advantages of the O'Hara forceps first described in the "American Journal of Obstetrics" for July, 1900. Their advantages are summed up by him as: 1. Only one forceps is required for any size of intestine; 2, it is not necessary to ligate or clamp the bowel as in the button or other methods, as the forceps keep the intestine closed at the site of resection throughout the operation; 3, no manipulation or work inside the bowel is done, so that the advantage of cleanliness is one of the strongest points in its favor. Lastly, the perfect control of the work, the slippery intestine being held with ease and allowing accuracy of suturing, and the general simplicity of the apparatus.

11. **Tuberculosis.**—Knopf is in favor of special provision for tuberculous patients in existing dispensaries, but still more for special tuberculosis dispensaries after the pattern of the Emile Roux foundation at Lille, France, and the one established in Havana by the United States government. He thinks there may yet come a time when with the modern sanatoria and some seaside sanatoria for tuberculous children, the tuberculosis dispensaries he advises will be valuable distributing and diagnosing points.

12. **Opium in Surgery.**—This article is a plea for opium in many conditions in surgery. Lee holds that while it should be used judiciously and its injudicious administration is injurious, it has special indications. In fractures, for example, and in severe burns, in trauma or surgical shock, if accompanied by pain or hemorrhage, and also before the administration of anesthetics. This is particularly true, he says, if the individual is addicted to the use of alcoholic stimulants or suffering from fever or nervousness. He notes the tendency to prejudice against it in abdominal surgery, but where it is possible to clean out the intestinal tract, relieve the lungs, kidneys, and liver of any co-existing congestion, he does not believe a little morphin to stop pain is going to do the harm credited to it. Of course, great caution should be used. It is the best internal hemostatic in the treatment of hemorrhage, and it often relieves obstinate and exhausting vomiting after anesthesia. In the first twenty-four hours after operation the pain becomes so severe it causes uncontrollable restlessness, and morphin should be used to relieve it. In certain conditions he believes in judicious administration of opium in peritonitis regardless of its cause. He gives examples of the reversal of the opinion in regard to opium when the surgeon is himself the operated on instead of the operator.

13. **Retinoscopy.**—Wiesner's article describes the conditions of the eye which may come before the practitioner, and endeavors to present a test for refractive conditions, calling attention to the abuses of refraction in the hands of unskilled and ignorant opticians.

14. **Corneal Astigmatism.**—Saril describes the conditions of astigmatism, noticing some of the salient features, subjective symptoms, methods of diagnosis and correction.

Philadelphia Medical Journal.

March 23.

- 15 *The Increase of the Use of Cocain Among the Laity in Pittsburg. Thomas G. Simonton.
- 16 *The Use of the Electrotrophic Angiotribe in Lieu of the Employment of Ligatures in the Open Operation for the Relief of Varicocele. Orville Horwitz.
- 17 Additional Notes on Organacidia Gastrica. Mark I. Knapp.
- 18 *Mouth Infection, Due to Natural Teeth. (To be continued.) D. D. Smith.
- 19 *Psychopathic Epidemics. (Continued.) John B. Huber.

15. **Cocain Addiction.**—The increase of cocain addiction is noticed by Simonton, who gives some of his own experiences, mentions symptoms and treatment. He finds that the drug produces an exhilarating effect which rapidly disappears, followed by increase audition and in habitues by auditory hallucination. He believes the habit is one of the most difficult of all drug habits to cure, and from his investigations in drug stores he finds that the sale is very largely increasing, especially among the colored population who are the largest users of it at the present time. It is his honest belief that 3,000 ounces is not an unusual amount to pass over a single counter in a year, but actual figures are hard to obtain. One druggist admitted, in the presence of witnesses, that he sold 40 to 50 ounces a month. He suggests a strict law against the sale of cocain, except on prescription of reliable physicians, who are personally known to the druggist, and prohibiting physicians from giving it to those who are thought to be drug fiends.

16. **Varicocele.**—Horwitz recommends the Downes' electrothermic angiotribe as described in THE JOURNAL for Aug. 17, 1901, for the open treatment of varicocele, reporting a case of unusually large varix, thus treated. He says it has decided advantages over the simple angiotribe in being less crude and dangerous, in less danger of secondary hemorrhage and thrombus, lack of pain after operation and less danger of orchitis.

18.—This article has appeared elsewhere. See THE JOURNAL of March 14, §83, p. 739.

19. **Psychopathic Epidemics.**—Huber notices in this article the Schlatter, Francis Truth, osteopathy, Eddyism and other delusions. He considers that Schlatter was probably honest, but insane. He remarks as to the factors which produce these psychopathic epidemics, that imitation is far the most potent. He has investigated Eddyite cures and has not come across a single one of a serious disease, which they claimed to have thus relieved.

Medical News, New York.

March 23.

- 20 *Spinal Concussion, So-called. Carl E. Black.
- 21 A Brief Consideration of the Mechanism of Mental States Encountered in Alcoholic Insanity, with Illustrative Cases. W. K. Walker.
- 22 *Scope of Vaginal Section. H. J. Boldt.
- 23 *The Scope of Vaginal Section. Hiram N. Vineberg.
- 24 *How Easily We Can be Mistaken in the Diagnosis of Cancer of the Stomach. Mark I. Knapp.
- 25 *The Operative Treatment of Fracture of the Patella. Russell S. Fowler.
- 26 Some Physiological Observations on a Crustacean Heart. George V. N. Dearborn.

20.—See abstract in THE JOURNAL, xxxix, p. 1,132.

22. **Vaginal Section.**—Boldt's article is the same in substance as that abstracted in THE JOURNAL of March 28, §84, p. 875.

23. **Vaginal Section.**—Vineberg considers this subject exclusive of vaginal hysterectomy and also of operations performed for the correction of uterine displacements by this route. Excluding these, he finds the scope of the operation in pelvic abscess, pyloroplasty and ovarian abscess, conservative surgery in diseased adnexa, in cases of ovarian cyst, in myomectomy for small fibroid growths of the anterior wall or the fundus of the uterus, in ectopic pregnancy under certain conditions, as: 1. In obscure cases to aid in forming the diagnosis, and 2, in cases where there is no further hemorrhage and the already effused blood has formed a hematocele in the Douglas cul-de-sac or at the base of one of the broad ligaments. In many of these cases vaginal section and drainage prove to be curative. In others, again, the affected tube is the source of future trouble which may require its removal with the corresponding ovary. In case of pyosalpinx and ovarian abscess he would operate by this

method only when the sac is easily reached and can be removed entire, and when it is not large and can be removed readily by the anterior incision, and sometimes in the acute stage to tide the patient over the dangerous period. The locality of the pus collections, in abscess and salpingitis, of course, must guide the operator.

24. Cancer of the Stomach.—Knapp gives a hypothetical and two actual cases, one of his own observation and one taken from Obrastzow's experience, which show the difficulties sometimes encountered in recognizing the true condition of things in certain cases of *gastrostia fungosa*.

25. Fracture of the Patella.—Fowler considers a certain number of cases in which operative treatment is contra-indicated such as when there is intercurrent disease of such a nature as to prohibit operation, and when the patient prefers to pass the remainder of his life partially disabled rather than to take the chances of a certain amount of risk of life. Longitudinal fractures do not require operation. In comminuted fractures it is unjustifiable except in selected cases when circumsuture may be employed; neither do transverse fractures in which rupture of the capsule has not occurred, require operation. This alone, however, is very rare and is revealed by slight separation of the fragments, absence of tilting of the fragments, and but slight effusion in the joint. The aponeurotic structures on either side of the joint will also be found intact. In ordinary transverse fractures, bony union is prevented by separation due to muscle contraction and the interposition of periosteum and torn capsule between the fragments, and also by tilting of the fragments, all three of which are hindrances to proper approximation, and one of which, the interposition of periosteum and torn capsule, forms an unsurmountable obstacle to bony union. The pathologic conditions, therefore, are absolutely in favor of operation. Treatment by apparatus is, moreover, unsatisfactory. There is a constant tendency to stretching of the fibrous structures causing weakness in the extension of the limb and inability to walk except on the level. Adhesions are apt to persist and cause pain, hence, the advisability of operative interference in all these cases. The amount of coincident traumatism and synovitis must determine the time of operation. If there is slight injury to the surrounding structures it may be immediate. If, however, the traumatism and synovitis are marked, it is best to allow a few days to elapse so as to give the system a chance to meet more effectively the additional traumatism of operation. This period varies from five to fourteen days. Over-separation of the fragments should be guarded against and effusion controlled by elevation, fixation, evaporating lotions, ice pack, etc. In case of extreme distension of the joint, aspiration may be performed aseptically. In his operations he makes it the rule not to allow the hand to touch the wound, using two knives, one for the skin and one for the deeper tissues, to protect against infection. The details of operation are given. The surfaces are freshened with a sharp curette, all the blood clots removed, the bone is drilled, the drill provided with an eye forming a carrier for the suture. He uses a medium-sized chromicized kangaroo tendon for suture. A light dressing is applied and the ends secured by the Volkman splint. In the later treatment he sometimes uses a light plaster cast if necessary. Cases are reported.

Boston Medical and Surgical Journal.

March 26.

27 *Extensive Cavity Formation in the Central Nervous System, Presumably Due to *Bacillus Aerogenes Capsulatus*. Emma W. Mooers.

28 **Bacillus Shiga* in an Epidemic of Diarrhea. Lawrence W. Strong.

29 *Systemic Infection Due to Natural Teeth Conditions. D. D. Smith.

30 *Suppuration of the Frontal, Ethmoid and Sphenoid Sinuses. (Concluded.) Edgar M. Holmes.

27. Cavity Formation in the Central Nervous System.—Mooers describes a case of very extensive "Gruyère cheese" brain and cord, of which the illustrations are very striking. The patient was an old parietic, profoundly demented. He died suddenly with signs of increased restlessness, abdominal distension, a temperature of 104 and respiration of 48 to 58. The autopsy showed the condition as mentioned and revealed

in the cavities great numbers of bacilli about the size and appearance of anthrax bacilli, and morphologically and in staining reaction identical with the *Bacillus aerogenes capsulatus* of Welch. To these she attributes the cause of the condition and thinks it is probable that it existed before death as there was no other demonstrated cause and the invasion of the circulating blood by the bacilli might be assumed to account for the symptoms.

28. *Bacillus Shiga* in the Epidemic of Diarrhea.—Strong reports an epidemic of diarrhea, with many cases of ileocolitis in a seaside summer resort where sanitary conditions were almost ideal. The water supply seemed to be well isolated, there was nothing to credit it with the disorder. The milk supply was also apparently as good as could be expected. The bacillus isolated seemed to be identical with that of the *Bacillus dysenteriae* of Shiga and its reaction in cultures was identical. The strongest suspicion as to cause of the disorder seems to have been from milk infection.

29.—This article has appeared elsewhere. See THE JOURNAL of March 14, 1883, p. 730.

30. Sinus Suppuration.—Holmes' article is concluded in this issue. He notices the symptoms of nasal sinusitis at length, whether located in the anterior, ethmoid or sphenoid cells. Prognosis and treatment are also detailed. He thinks the prognosis is generally fair, though considerable care and attention should be given to the after-treatment, and some relics of the disorder may remain. The article with the preceding issues should be thoroughly read for its full understanding.

Medical Record, New York.

March 23.

31 *Renal Decapsulation for Chronic Bright's Disease. George M. Edebohls.

32 *Specific Treatment of Diphtheria. George B. Philhower.

33 *The Psychical Element in Hay Fever. Raymond Wallace.

34 On the Biological Relationship of Proteids and on Proteid Assimilation. P. A. Levene.

31. Renal Decapsulation.—Edebohls reports his experience with his method of renal decapsulation for chronic Bright's disease, including a total of 51 cases. A number of these are reported in detail. There were 14 deaths; 7 of them within fifteen days of operation and 7 at later periods. Three of the 7 deaths of the operative mortality were due to uremia, 2 to acute dilatation of the heart, 1 was caused by pneumonia and one by combined uremia and cerebral hemiplegia. He was obliged to take cases almost moribund. He does not consider the mortality a serious one, in fact, the greatest peril to the patient is from the anesthetic. Of the remaining patients, 2 patients did not show satisfactory improvement; 22 are in various stages of satisfactory improvement and progress toward health at periods varying between two and fifteen months after operation. They have not, however, passed the probationary period of six months of normal urine, before the expiration of which no patient is entitled to a place on the list of cures. Nine patients were cured and remained cured in periods varying from one year, nine months to ten years. One patient operated on with one kidney had a repetition of chronic Bright's disease after four years. He thinks there are two important facts to be recognized, first, that chronic Bright's disease in its early stages, at least before serious and fatal damage has been done, is curable or susceptible to amelioration by renal decapsulation. The second is that renal decapsulation in the early stages of chronic Bright's disease is attended in competent hands with little or no risk of life.

32. Diphtheria.—Philhower advocates the use of antitoxin in all cases of diphtheria and would have it required by law. Since 1895 antitoxin has saved for him 28 children and given him just about one year's more sleep than he would otherwise have enjoyed without its use. He prefers to use in tonsillar cases 2,000 units, 10 c.c. in quantity. Nasal cases require two to three times as much and the laryngeal cases should receive from three to five times as much. If there is a great amount of glandular swelling, very large doses of 4 to 6,000 units should be used as the swelling indicates extensive poisoning. He prefers 2,000 units strength, in 10 c.c. and would stick to one reliable manufacturer.

33. Hay Fever.—The psychical element in this affection is noted by Wallace, who reports several cases where, he thinks, it was an important element. There is hardly another disease in which it is so important as in this.

Cincinnati Lancet-Clinic.

March 28.

- 35 *The Removal of the Appendix as an Incident in Abdominal Operations. J. F. Baldwin.
- 36 Enuresis. F. H. Darby.
- 37 Surgery of the Prostate, Pancreas, Diaphragm and Spleen. (Continued.) B. Merrill Ricketts.
- 38 A Combined Serum, Obtained from the Jackass and the Billy-goat. Brose S. Horne.

35. Removal of the Appendix in Abdominal Operations.—Baldwin has examined his cases for some time to see the condition of the appendix, and in a total of 636 he found it normal in only 27 cases. This, he thinks, is an overestimate, as external examination does not give a good idea of the internal conditions. He advises removal in all cases, and in nearly all of these the appendix was removed by his method of inversion, consisting in first ligating the meso-appendix close to the bowel, then cutting it across beyond the ligation and stripping it away from the appendix clear to the tip with the fingers or forceps. Then inverting the appendix commencing at the tip, and when concluded, a single stitch of catgut is taken across the inverted base and the operation is finished. The inverted appendix, he says, drops off in a few days and is evacuated. This takes one or two minutes of time, and he would not advise it in cases where great expedition is required on account of an alarming condition of the patient.

St. Louis Medical Review.

March 28.

- 39 Clinical Report of Cases (Appendectomy, Hemiglossitis, Abdominal Hysterectomy). R. M. Funkhouser.
- 40 Acute Articular Rheumatism, with Serious Complications. Edmond J. Melville.

University of Pennsylvania Medical Bulletin, Philadelphia.

March.

- 41 A Report of Two Cases of Trephining for Jacksonian Epilepsy. Charles K. Mills and J. William White.
- 42 *Dementia Precox (Dementia of Adolescence). Charles W. Burr.
- 43 *A Physiological, Anatomical and Pathological Study of the Glossopharyngeus and Vagus Nerves in a Case of Fracture of the Base of the Skull. William G. Spiller.
- 44 The Effects on the Nervous System of Electric Currents of High Potential, Considered Clinically and Medicolegally. Charles K. Mills and Theodore H. Weisenburg.
- 45 A Case of Intracranial Spinal Cyst, with Operation and Recovery. W. G. Spiller, J. H. Musser and Edward Martin.
- 46 A Case of Progressive Muscular Atrophy Occurring in a Man Who Had Had Acute Poliomyelitis Nineteen Years Previously. Charles S. Potts.
- 47 *The Skiagraph in Gross Brain Lesions. Henry K. Pancoast.
- 48 The Changes in the Peripheral Nerves Produced by Toxic Substances Applied to the Skin—A Medicolegal Study. D. J. McCarthy.
- 49 The Use of Respiratory Exercises in the Treatment of Neurasthenia and Allied Conditions. J. W. McConnell.
- 50 Traumatic Musculospiral Paralysis, Cured by Operation Releasing the Nerve from the Cicatricial Tissue. Charles J. Mills. Operation by J. William White.

42. Dementia Precox.—Burr reviews the history of this form of mental disease remarking that hardly any of its symptoms are characteristic in its early stages, and that it is especially a disorder of bad organization. No one will get dementia precox except those who are preordained. He reports several cases to give the clinical picture of the disease and remarks that while the onset was said to be sudden, this is due to lack of careful observation in the preceding stages. Apart from heredity it is probable that a fetal disturbance may be largely its cause. The age of onset with marked symptoms varies within large limits. He includes here, rather provisionally, the original paranoia, reporting one case of this type. The symptoms are nearly all mental. There may be emaciation, poor circulation, dermatographia, etc., in the early stages, but there are never evidences of organic brain or spinal disease. There are no pathognomonic symptoms. The patient generally keeps his consciousness in the early stages of the disease, but can not control his hallucination or delirium. In stuporous cases unconsciousness may be apparent, not real, and during that stage there may be the increased muscle tension known as catatonia. Remissions are common. The prognosis is bad. The paranoid form is never recovered from. A few, 8 or 10 per cent., of the hebephrenics and a slightly larger number of

the catatonics recover. Many go on to absolute dementia and some become quiet, chronic patients of the asylum. The treatment is not very hopeful in the well-pronounced disease, but careful attention to early training and environment may have very good results.

43. Glossopharyngeus and Vagus Affections.—Spiller reports a case in which there was an extensive softening involving the roots of the glossopharyngeus and vagus, and he remarks in regard to the functions of these nerves as indicated by the symptoms during life, especially the taste sensations. They were intact in the anterior portion of the tongue, hence, he concludes that they must pass through the chorda tympani, but whether through the portio intermedia or the trigeminus he is not prepared to say. As for the posterior portion of the tongue he is inclined to think that the glossopharyngeal nerve controls the function of that region. He also discusses the mode of innervation of the soft palate and the origin of the accessorius as illustrated by this case.

47. The Skiagraph in Brain Lesions.—From a number of cases here reported, McCarthy concludes that the value of the Roentgen rays in brain lesions is at present dubious, but it may yet be an important point in the diagnosis. To gain such experience no case should be allowed to escape the skiagrapher.

Journal of Cutaneous Diseases, New York.

March.

- 51 *The Etiology of Acne Vulgaris. Multiple
- 52 Report of a Case of Systemic Multiple
- Cutaneous and Subcutaneous Lesions. Oliver S. Ormsby.
- 53 Acne and Its Treatment. George H. Fox.

51. Acne.—Gilchrist has studied the etiology of acne vulgaris, including in this paper the results of his previous observations, and finds that a definite bacillus, which he had already named the *Bacillus acnes*, was present in all smears taken from 240 typical acne lesions in 85 patients. Pure cultures were obtained from 62 lesions in 29 patients. The others were failures largely because the proper media were not used. Others showed the *Staphylococcus pyogenes albus* or *epidermidis albus*. Sections of an excised comedo, of an early acne papule, of an acne pustule and of five acne nodules from 6 patients demonstrated the stages of the disease, consisting in changes extending deep into the corium surrounding in some nodules a magnified and markedly hypertrophied follicle. The lesion was made out of cell masses, many giant cells, plasma cells or connective tissue cells and many polymorphonuclear cells were present, massed in some sections so as to form miliary abscesses; numerous phagocytes and many pigment cells were also seen in some cases. The blood vessels were numerous and dilated. Some of the giant cells contained bacilli. *Bacillus acnes* was found pathogenic in mice and guinea-pigs. It is a short, thick bacillus in the smears, but in culture it often becomes much longer and thicker; and in old cultures assumes distinct branching forms. The clumping of *Bacillus acnes* by the sera of the patients affected with acne vulgaris suggests a specific toxic body derived from the presence of the bacilli and absorbed by the blood, resulting in a specific agglutination. Gilchrist thinks it is a question whether we are not taking a wrong view in considering the anemia, constipation, headache, coated tongue, etc., as always predisposing causes of acne vulgaris, whereas these may be the result of the absorption of toxins from the bacilli. He compares the disease with erysipelas. While there are predisposing causes such as age, diet, etc., there are many cases where all that is advised is carried out without results. In its severer forms acne vulgaris is a serious disease, not dangerous, but one that affects the whole system. He notices in conclusion Sabouraud's recent article and discovery of a microbacillus, which, he thinks, looks like his findings, but he remarks that it is curious that Sabouraud has observed no branching forms.

Interstate Medical Journal, St. Louis.

March.

- 54 *Remarks on the Significance of Some Nervous Signs and Symptoms. Charles G. Chaddock.
- 55 *Tobacco Poisoning. A. C. H. Friedmann.
- 56 Laboratory Diagnosis—Its Relation to the General Practitioner. Raymond Wallace.
- 57 Appendicitis. H. L. Nietert.

54. **Significance of Nervous Reflexes.**—From his observations, and he criticises the text-books, Chaddock deduces that alterations, that is, exaggeration or diminution of the deep reflexes are almost always indicative of organic nervous disease; that the Babinski sign (the physiologic presence in infancy excepted) and foot-clonus are always signs of organic nervous disease, and lastly, anomalies of pupillary reaction to light have the same significance. There is only one exception to these deductions: disease of a joint may cause atrophy of muscles about it and with this, exaggeration of related deep reflexes. No doubts the pathologic exaggeration or diminution of deep reflexes during fatigue.

55. **Tobacco Poisoning.**—Friedmann thinks that the smoking of tobacco is especially injurious if excessive, as also is tobacco chewing, which may give rise to tobacco psychoses. Snuff-taking does not affect the general health, but may injure the middle-ear and set up a distinct form of chronic otitis media. The relation of alcohol to tobacco as a cause of amblyopia is discussed, but he thinks the effects of alcohol on the eyes are decidedly different, and as a rule not half as serious. The great danger of this is in the general poisoning of the nervous system and there is no such demoralizing effect after tobacco use. The danger, of course, lies in the fact that both are usually practiced by the same individual and he has to combat them both together.

Journal of Medical Research, Boston. March.

- 58 *Observations on the Morphology of *Bacillus Diphtheriae*. *Bacillus Pseudo-Diphtheriae* and *Bacillus Xerosis*. Francis P. Denny.
- 59 A New Technic in Metabolism Experiments. Francis H. McCrudden.
- 60 An Encapsulated *Diplococcus* in Mastoiditis. Mary S. Packard.
- 61 A Study of the Necroses Occurring in the Livers of Experimental Animals After Inoculation with Hog-Cholera Bacilli. Charles H. Boxmeyer.
- 62 On the Multiplicity of the Serum Hemagglutinins of Cold-blooded Animals. Hideyo Noguchi.
- 63 On the Heat Lability of the Complements of Cold-blooded Animals. Hideyo Noguchi.
- 64 The Period of Development, the Time of Greatest Accumulation, and the Persistence of Diphtheria Antitoxin in the Blood of a Series of 100 Horses. James P. Atkinson.
- 65 *The Presence of the Shiga Variety of Dysentery Bacilli in an Extensive Epidemic of Dysentery, with Notes upon the Serum Reactions Obtained. Wm. H. Park and H. W. Carey.

58. **The Morphology of *Bacillus Diphtheriae*.**—Denny has investigated this bacillus and its allied forms, and finds that the three forms, the *Bacillus diphtheriae*, the *Bacillus pseudo-diphtheriae* and the *Bacillus xerosis* are similar in young cultures. In older cultures differences are seen. The *Bacillus diphtheriae* has a more marked development as a higher form, showing clubbed, barred and filamentous forms, and occasionally true branching. The *Bacillus pseudo-diphtheriae* has no such development, but the *Bacillus xerosis* has a higher development, characterized by the elongation of the rods and the breaking up of the protoplasm into segments. He suggests that the diphtheria bacillus and that of xerosis have developed by evolution from simple forms like *Bacillus pseudo-diphtheriae*, each passing through, in its early life, a stage of development corresponding to the early development of the race, or it is possible that the *Bacillus pseudo-diphtheriae* represents a reversion from a higher type.

65. **Dysentery Bacilli.**—Park and Carey describe an epidemic of dysentery occurring in a town of about 3,000 population, a little north of New York City. There were about 350 cases with a mortality of 6 per cent., the average age of fatal cases being a little less than three years. The epidemic was most severe among the class of people living in filthy surroundings. There was no sewage system and the well water was badly contaminated. The onset in all cases was sudden, with cramps, diarrhea and tenesmus. The stools were at first feculent, then sero-mucous, then finally bloody and mucous. Blood was present in considerable quantity for two or three days and then disappeared. It disappeared entirely in most cases in six to ten days. Temperatures were low. The mild cases lasted generally two weeks, the severe three to four, the malignant a few days. In one fatal case of a child aged one year and four months, an autopsy was obtained and the Shiga

bacillus isolated. Dysentery-like bacilli were also found in the feces of several convalescents. The difference was in the indol formation and the manit fermentation, also in their agglutination reaction. The authors hold that there may be more than one form of bacillus responsible for dysentery epidemics. It is extremely probable that if Shiga carries out his culture and agglutination tests as far as is now known to be necessary in order to differentiate the varieties, it will be found that in Japan, as well as in America and elsewhere, not one, but several varieties of this group of bacilli are present.

Annals of Ophthalmology, St. Louis.

January.

- 66 Report of Two Cases of Congenital Anomalies of the Eyes, Illustrating the Transmission of Such Defects from Mother to Daughter. Wm. Campbell Posey.
- 67 *The Conservation of Binocular Single Vision. Eugene R. Lewis.
- 68 *Paraffin—Its Use in the Formation of a Stump After an Enucleation. George F. Suker.
- 69 *An Examination, Personally Conducted, of 4,608 Railroad Employees for Acuity of Vision, Hearing and Color Perception. Gilbert D. Murray.

67. **Lack of Binocular Single Vision.**—This condition is much more common than is usually supposed, according to Lewis' observations. He summarizes his conclusions on the subject in the following: "1. The only congenital attribute of vision is proper light perception. All other visual attributes depend on learning on the part of the child. 2. In many cases certain influences cause this learning to be directed into other than normal paths, in which event the act of binocular single vision is not learned. 3. Lack of binocular single vision is a very prevalent condition. 4. This lack represents great loss to the individual. 5. Cases in which the causal influences can be removed may be differentiated from those in which such removal is impossible. 6. Proper measures adopted at the right time will result in conservation of binocular single vision in a large number of cases."

68. **Paraffin for Eye Stumps After Enucleation.**—Paraffin prothesis for making a stump is recommended by Suker, who uses a mixture of white paraffin and pure vaselin, 3/5 of the latter and 2/5 of the former. This gives a mixture which melts at 102 F. Later the vaselin is absorbed, leaving the hard paraffin, with a higher melting point. This has been proven in cases of furnace workers. The melting point of paraffin can be regulated by the amount of vaselin added; the more vaselin the lower the melting point, and vice versa. He would preferably inject the paraffin about one week after evisceration. It is still more useful for restoration of a sunken socket after a remote enucleation. The details of the procedure are given:

After thoroughly cocaineizing the socket, as well as having freely used adrenalin (1/1000), with a pair of tissue forceps you pick up the apex of the socket-plate; then with a narrow scalpel you enter the subconjunctival space at the apex to the extent of 3 millimeters, then make an elliptical cut about the point of entrance. This will give you a pocket in both cul-de-sac, with but a single opening. The entire anterior flap of this pocket will be approximately 3 mm. thick, and the size of the pocket will be in accordance with the size of the socket to be filled out. The higher you cut into the cul-de-sac, the more prominent will the stump be after the injection of the paraffin. After checking the trivial hemorrhage, you inject about a dram or so of properly prepared paraffin through this small opening, or enough to give you the desired fullness. However, be careful not to overdistend the cavity as this will produce not only great pain but even sloughing of the flap with the ultimate expulsion of the paraffin. Before introducing the paraffin it is advisable to place a suture so as to be able to close the opening after the injection, it being rather difficult to do it afterward.

The reaction is usually quite severe, but can be controlled by a cold pack for several hours and repeated as needed. The artificial shell can generally be inserted in one week to ten days later.

69. **Railroad Employees' Examinations.**—Murray reports the results of examination of something over 4,000 men for the Delaware, Lackawanna & Western Railroad for vision, hearing and color perception. He found about 3.01 per cent. were color blind; 2.58 per cent. had weak chromatic sense; 9.44 per cent. were in need of glasses or other means to improve their vision for distance. He suggests discouraging the use of tobacco and making frequent examinations on account of the dangers of acquired color blindness; that the employees should have at least eight hours of sleep, as loss of sleep leads to intemperance, smoking and nervous irritability.

American Journal of Obstetrics, New York.

March.

- 70 *Report of Three Cases of Rupture of the Uterus During Labor and a Consideration of the Treatment Based on Ten Cases. Joseph B. De Lee.
- 71 The Treatment of Placenta Previa. Chauncey D. Palmer.
- 72 *The Relation between Uterine and Gastric Diseases. Tuszkal Oedö.
- 73 *Puerperal Eclampsia, with Report of Nineteen Cases. H. G. Partridge.
- 74 Carcinoma of the Large Intestines, with Special Reference to von Mikulicz's Method of Resection. M. Stamm.
- 75 A Review of Some of the Older Writings on Maternal Nursing. Samuel McC. Hamill.
- 76 *Cellotomy During Pregnancy. J. H. Carstens.

70. Rupture of the Uterus.—De Lee reports a case and reviews the treatment. He remarks that it is not always possible or advisable to attempt to deliver a child by the natural route on account of the danger of hemorrhage. In case of uncontrollable hemorrhage or highly contracted pelvis, laparotomy may be imperative. What to do with the uterus depends on the conditions. In hospitals and under aseptic treatment the uterus may be closed with a suture or drained from below, but if there is any suspicion of sepsis, the whole uterus should be removed, the peritoneum closed and the subperitoneal space drained per vaginam. It is an accident which usually occurs at home and has to be treated where it occurs. The conditions do not permit of transportation, as a rule, and since laparotomy is a formidable operation requiring much preparation, the method of treatment that brings about the quickest delivery, stops hemorrhage and gets the patient into bed is the correct one. Of the four methods of treatment, delivering the patient from below, that is, expectancy and symptomatic treatment, tamponade, with or without suture, or extirpation of the uterus per vaginam, the best one is the partial suture and drainage of the peritoneal cavity and site of rupture. In septic cases drainage offers much hope, but vaginal extirpation of the uterus is coming into vogue and when hemorrhage is not too severe it may be practiced.

72. Uterine and Gastric Diseases.—The relation of uterine and gastric diseases are summarized by Oedö as follows:

1. Uterine and gastric troubles may be in close reciprocal relation. 2. In making a diagnosis of reciprocal action, merely coincident affections of these organs must be strictly excluded. 3. The first medium of reciprocal action is the nerve path, the center of which for the genital is to be sought, not in the brain or spinal cord, but in the sympathetic system. The ventral center of this is the solar ganglion, by means of which the uterus, through the inferior hypogastric plexus, is brought into reflex association with the anterior and posterior gastric plexuses. The reflex paths are called spermatic, pudendo-hemorrhoidal, cutaneo-cavernous, utero-celiac, and utero-spinal anastomoses. The more direct reflex paths are direct connections of the vagus with the sympathetic nerve system without entering the solar plexus, especially with the utero-vaginal plexus and with the parauterine ganglia, which are connected with this (genito-urinal anastomosis). 4. The other mode of origin of reciprocal action must be sought in changes of the common statical relations of both organs. 5. Dislocations of the stomach cause uterine displacement through reciprocal action of the statical mechanical forces (secondary uterine trouble); whereas primary displacements of the uterus produce secondary gastroneurosis or actual gastric disease, the reciprocal action in these cases being brought about through nerve reflexes. 6. The blood path plays a rôle of only tertiary rank in regard to this reciprocal action.

73. Puerperal Eclampsia.—The theories of eclampsia are noticed by Partridge, who considers the albuminuric theory insufficient. The thyroid theory may be correct in some cases, but the most generally accepted one, and the one that best explains the condition, is the toxemic or metabolic theory, and he is inclined to follow Dorland's suggestion that acetone may be responsible, though other toxic agents also have an action, and there is a promising field of research here. He considers that in treatment, chloroform, while it controls the attacks, is only treating a symptom. Morphia dries up the secretions, though this objection is often more theoretical than practical. Venesection and veratrum viride are mentioned as of use in certain cases, and pilocarpin is occasionally of much value, though it is liable to produce edema of the lungs, a danger to which the patient is already only too subject. Chloral and the bromids are the sheet anchors as far as controlling convulsions are concerned. They should be preferably given by the rectum. Diuretics and cathartics should be given in every case until both the kidneys and the bowels are thoroughly active. For bowel action croton oil or saline cathartics are preferable. Hot baths, hot packs or hot air are of value, and one or the other should be used in every case to produce sweating. When the

temperature is rising, a cold tub bath may do good, as in one case reported. The use of normal saline solution is becoming more and more popular, and deservedly so. The last and most important method of all is emptying the uterus. The method of procedure must vary with the case, using the dilator if necessary. Undue force and too great haste must be avoided, however.

76. See abstract in THE JOURNAL, xxxix, p. 854.

Therapeutic Gazette, Detroit.

March 15.

- 77 The Treatment of Typhoid Fever with Benzoyl-Acetyl-Peroxid or Acetozone—A Clinical Study of Its Action in 128 Cases in the Cook County Hospital. Frederick G. Harris.
- 78 *The Effects of the Inhalation of Smoke and of Irritating and Poisonous Gases by Firemen, and the Proper Treatment of Results. J. Chalmers Da Costa.
- 79 Treatment of Prostatic Hypertrophy. (Continued.) Edward Martin.
- 80 *A Critical Study of Tuberculin and Allied Products Based upon a Collective Investigation. F. M. Pottenger.
- 81 Observations upon the Hypnotic Action of Hedonal. Frederick L. Hills.
- 82 *An Inquiry into the Value of the Irrigation Method as a Means of Aborting and Treating Acute Specific Urethritis. Orville Horwitz.

78. Smoke Inhalation.—The danger of inhaling smoke, according to Da Costa, is very serious. There is a great difference among men in their tolerance of it, alcoholic cases and fat people with heart disease can not stand much. There is a great difference also in the various kinds of smoke. In all cases it contains some carbon monoxid. Some smoke is merely irrespirable, some is not only irrespirable, but poisonous and irritating. Cold smoke is much less troublesome than hot smoke. Among the worst forms of plain smoke may be mentioned smoke from lumber, furniture, barrel-staves, peach baskets and paper, which is suffocating and irritating to the eyes and respiratory organs. Smoke from oil, varnish or paint is hard to tolerate, while that of rags, hay, pitch and petroleum is not so offensive or so irritating. The density must be taken into account. Comparatively innocent smoke if very dense will be equally bad. The theory that smoke is only irrespirable when a lamp will not burn in it is not correct, as a lamp will burn in smoke that a man can not breathe. Smoke containing ammonia or sulphuric acid is especially bad. Illuminating gas is very dangerous, especially water gas which is at present so much used and can not be detected by its odor. Smoke containing acid fumes is very bad, as shown by the recent experience at Milwaukee where the chief of the fire department and three of his men died from the inhalation of nitric acid fumes. A man generally knows when he is going to be overcome, by the tendency to breathe with his mouth open, to take deeper and more frequent breaths, and by the development of ringing in the ears, oppression in the chest, etc. He often falls when he gets out into the fresh air, but ordinarily recovers, though he is more likely to be overcome the second time. In very severe cases consciousness may be lost, the extremities become cold, muscles relaxed and delirium may follow the unconsciousness. The milder cases recover in the open air. In the actual cases of unconsciousness there is danger. Firemen believe in yeast beer as a remedy which causes a gaseous distension of the stomach, with belching and sometimes vomiting. Dr. Da Costa is not able to show how this benefits, but they have great faith in it. In treatment, artificial respiration, the administration of oxygen, rubbing the extremities and later hot applications and further symptomatic treatment. The surgeon should always ask whether the smoke is clean smoke or not, in treating these cases. The victims of "back drafts" are usually scorched and shocked. Men who inhale hot smoke should be given stimulants at once and removed to a hospital. The coal gas effects are especially bad, and a man will generally have warning of it in headache and great muscle weakness before he is overcome. In these cases when a man is overcome with illuminating gas, artificial respiration should be practiced and continued until satisfactory results have been obtained; rubbing the extremities, a mustard plaster over the heart, hypodermic injections of strychnin or atropin and as soon as safe to move the patient, he should be taken to a hospital. In cases of inhaled ammonia the inhalation of vinegar is advisable, and very

dilute ammonia may be given after the inhalation of acid vapors. Vomiting should be encouraged. If chlorin or hydrochloric acid has been inhaled, the best treatment is the inhalation of steam. If these have been inhaled to any great extent, the man's life is in danger from glottic edema and an immediate tracheotomy may be required.

80. **Tuberculin.**—The literature is first noticed by Pottenger, who deduces, in substance, the following conclusions from the answers received in his investigation: 1. The profession, especially in Europe, is becoming less hostile to tuberculin and its allied products. The greatest opposition is from those who were unfortunate in their first experience. All who have used it later in suitable cases have observed a benefit, and those who have studied the remedies most carefully and used the greatest care and judgment in the selection of cases, have found almost without exception that they are of value. In 1,200 first stage cases, 610 treated in sanatoria by the usual hygienic methods and 589 under the same careful management plus tuberculin, 20.2 per cent. more of the latter were cured than of the former. Tuberculin checks the tendency of the disease to spread to new tissue, and there is less danger of relapse. He therefore concludes that tuberculin and the allied products are therapeutic measures in tuberculosis that are worth our earnest attention.

82.—This article has appeared elsewhere. See *THE JOURNAL* of March 28, 1907, p. 874.

Kansas City Medical Index-Lancet. March.

- 83 Report of a Case of Intestinal Anastomosis Following Strangulated Inguinal Hernia. C. Lester Hall.
- 84 Acute Appendicitis and Its Treatment. (To be continued.) John B. Deaver.
- 85 *Some Clinical and Operative Phases of Appendicitis. A. H. Cordier.
- 86 *Apomorphia and Some of Its Uses. W. H. Middleton.

85. **Appendicitis.**—Cordier advocates operation in nearly all cases. The clinical history is often misleading. The temperature is not so very important as an operation indicator as has been held. The pulse is, as a rule, increased, and can be relied on more in prognosis than can the temperature. This is especially true in the later stages of general peritonitis, but as long as the trouble is confined to the appendix proper, or its immediate vicinity, its behavior is often misleading. There may be a pulse of 140 from ptomaine absorption without any peritonitis at all, and this is often lost sight of by the practitioner. The rapidly constitutional septic cases are the most fatal of all. Pain is always present at some stage, yet its character and intensity is as variable as any other symptom. To rely on it would often be disastrous. He thinks the McBurney point is the most unfortunate discovery ever made. The appendix points according to its location, length and to the location of the pathology of the organ, and dependence on this point will lead to error. The most trustworthy indication of the true condition is, he thinks, tenderness located at the point nearest the site of that portion of the appendix diseased. Intestinal gaseous distension as a symptom of danger is valuable, but its absence is often misleading. The main point in his paper is to lay stress on the fact that to expect to find typical symptoms and be governed by their presence or absence, is a mistake and will cause delays and fatal errors. The presence or absence of leucocytosis is also too uncertain and misleading to be taken seriously.

86. **Apomorphia.**—The value of apomorphia in various conditions is insisted on by Middleton, who finds it one of the best emetics, acting directly on the vomiting center and producing but little nausea and usually no depression. He has seen it act in one or two minutes. While it is generally considered harmless, idiosyncrasy should be regarded. Death has occurred from the hypodermic injection of 1/15 of a grain. When necessary to evacuate the stomach no remedy acts so well. It has no irritating effect on the mucosa. Some authors say that the emetic action of apomorphia is hindered by chloroform or chloral and intensified by morphia. If this is so, it would seem that the drug is especially adapted to cases of morphia narcosis. Nothing arrests the hysterical paroxysms so quickly. He often gives it for various purposes in non-emetic doses, and in combination with codein and

white pine mixture it forms an ideal cough mixture, and it has no rival in post-grippal cough. As an expectorant, it takes a prominent position and in croup it has given him splendid results.

Vermont Medical Monthly, Burlington.

February 25.

- 87 Puerperal Septicemia. M. F. McGuire.
- 88 *Family History in Tuberculosis. A. B. Bisbee.
- 89 Acute Confusional Insanity. G. G. Marshall.
- 90 A New Method of Treatment for Chronic Anterior Urethritis and for the Declining Stage of Acute Urethritis. William W. Townsend.

88. **Family History in Tuberculosis.**—The modern tendency to attribute everything to germs and neglect heredity is opposed by Bisbee in the case of tuberculosis. He thinks importance should be laid on a number of conditions, especially by life insurance examiners. Contagion is only one; age, occupation, habits, personal history, weight and especially the family history are insisted on. The points, he says, on which we should lay strong emphasis are that there is nothing in the modern doctrine of tuberculosis or any recorded experience of life insurance companies justifying the conclusion that a consumptive family history can be neglected; that, while the death of a parent, or brother, or sister from consumption increases the liability to disease, it is possible to get a proper understanding of the degree of impairment only by giving attention to the applicant himself, his environments and his personal health record, as well as his family history. There should be no fixed rules. An active outdoor life, temperate habits and a robust physique may be looked on as compensating features when there is an inherited tubercular tendency, while the opposite conditions affect the risk adversely.

American Practitioner and News, Louisville, Ky. January 1.

- 91 Otitis Media. Hugh N. Leavell.
- 92 Report of Cases of Gallstones. William Moore.
- 93 Inevitable Abortion, with Report of Case. W. E. Gardner.

Nashville Journal of Medicine and Surgery. March.

- 94 Gastric Carcinoma. David R. Nell.

Pediatrics, New York. March.

- 95 *Observations on the Micro-organisms in the Water of Public Swimming Baths, and a Suggestion. E. E. Glynn.

95. **Micro-organisms in Public Baths.**—Glynn has investigated the water of various Liverpool swimming baths at different periods of the day and finds a vast increase in the number of bacteria towards the close of the day. He describes his methods, which seem to be satisfactory; taking an average of five observations on separate days of first class baths, it was found that the number of bacteria per c.c. in the water at night was 4,676; deducting 200 for those already present in the bath and 400 for multiplication, we find that 292 bathers introduced in round numbers 4,000 bacteria per c.c. Therefore, each individual introduced 13.7 bacteria per c.c. The water removed from the skin and hair of each bather in about ten minutes, approximately gave 4,000,000 germs. He says it is a great and glorious thing to wash, even in a swimming bath and without soap. In the second-class bath each bather contaminated the water with 6,000,000,000 bacteria. They are mainly small boys, which implies that the skin of the small boy in the second class is at least twice as dirty as that of the more respectable bathers in the first class. One has only to see the small boy before and after bathing to be convinced of this fact. He describes the methods in which the contamination takes place, and suggests an ideal bath where this might be avoided. The bacteria that were found were mostly the white staphylococci, and colon bacillus at the end of the day. He thinks the feeling of stupor and fatigue after swimming in a public bath, as felt by some persons, is not due to the numerous microbes contained in the water, but to defective ventilation.

Medical Review of Reviews, New York. March 25.

- 96 *Rudolph Virchow; An Appreciation. C. A. L. Reed.
- 96.—This article has appeared elsewhere. See *THE JOURNAL* of February 28, title 30, p. 606.

Cleveland Medical Journal.

March.

- 97 Some Remarks on Hypernephroma or Adrenal Tumor of the Kidney. A. P. Ohlmacher.
- 98 Two Cases Illustrating Certain Relations of Syphilis and Epilepsy. H. S. Allen.
- 99 A Case of Lead Poisoning and Epilepsy, with Remarks on Saturnine Epilepsy. W. C. Gill.
- 100 Annual Address of the President of the Academy of Medicine of Cleveland. F. E. Bunts.
- 101 The Chemical Characters of the Fluid of a Cystic Kidney. Torald Sollmann.
- 102 The Symptoms and Diagnosis of Rhino and Laryngeal Diphtheria. E. L. Mather.

American Medical Compend, Toledo.

March.

- 103 Graves' Disease. B. B. Leonard.
- 104 Varicella, Variceloid and Varicella. J. T. Woods.
- 105 The Oligemic Uterine Zones. Byron Robinson.

Occidental Medical Times.

March.

- 106 Report of an Epidemic of Acute Anterior Poliomyelitis. Alice M. Woods.
- 107 Gonorrheal Rheumatic Purpura. George L. Eaton.
- 108 The Ocular Manifestations of Syphilis. Wm. Ellery Briggs.
- 109 Some Interesting Cases of Insomnia. Francis Crosson.

New England Medical Monthly, Danbury, Conn.

March.

- 110 Compound Fractures of the Bones of the Hand or Foot. Thomas H. Manley.
- 111 Preventive Medicines and Measures. J. R. Hayes.
- 112 Lung Affection and Wasting Diseases. S. E. Fowler.
- 113 Report of a Case of Typhoid Fever Treated with Acetozone. Joseph A. Frasier.

Journal of Medicine and Science, Portland, Me.

March.

- 114 Recent Development in the Study of the Relationship between Chemical Constitution and Physiological Action of Organic Compounds. Virgil Coblenz.
- 115 Report of Part of the Operative Cases Treated at the Maine Eye and Ear Infirmary During December, 1902. E. E. Brown.

Medical Herald, St. Joseph, Mo.

March.

- 116 Gallstones; Their Pathology, Diagnosis and Treatment. W. J. Alexander.
- 117 Compulsory Vaccination. John D. Seba.
- 118 Case of Acute Catarrhal Cholangitis, with Remarks on Jaundice. J. S. Triplett.
- 119 The Pennsylvania Doctor. I. R. Coleman.
- 120 A Case of Fibroid Tumor with Pyosalpinx and Ovarian Abscess. Herman E. Pearse.
- 121 *Hyperplasia and Hypertrophy of the Uterus. Charles G. Gelger.
- 122 The Possibilities of the Normal Salt Solution. L. Clyde Davis.
- 123 The Treatment of Septic Peritonitis. J. B. Boucher.

121.—See abstract in THE JOURNAL of January 17, p. 189.

Albany Medical Annals.

March.

- 144 Obstetric Anesthesia. W. H. Ewin.
- 145 A Brief Review of the Recent Literature on Typhoid Fever, and Some Notes on the Treatment of the Disease. Wm. O. Spencer.
- 146 Adenoids and Their Treatment. J. F. Dickson.
- 147 General Paresis. Henry W. Coe.
- 148 Tuberculosis. W. C. Luchly.

Canadian Practitioner and Review, Toronto.

March.

- 149 Tic Douloureux (Trigeminal Neuralgia) Removal of the Gasserian Ganglion; Recovery. Herbert A. Bruce.
- 150 Premortory Symptoms of Failure of the Heart in Diphtheria. Frederick Fenton.
- 151 Mastoiditis Due to Gonococcus. Charles Trow.
- 152 Three Cases of Pyloric Obstruction. George A. Bingham.

Medical Age, Detroit, Mich.

March 25.

- 153 A Case of Diabetes Mellitus with Autopsy. T. E. Oertel and E. E. Murphey.
- 154 Insanity in Children. M. R. Crawford.
- 155 Remarks on the Relation of Eye-Strain to Epilepsy, Insanity, etc. William Cheatham.

Southern California Practitioner, Los Angeles.

March.

- 156 Robert R. Dorsey, M.D.—Tribute from Friend and Classmate. LeMoyné Willis.
- 157 A Review of Recent Progress in the Surgery of the Gall Bladder and Bile Ducts. Andrew S. Lobingier.
- 158 Cholelithiasis. George H. Scott.
- 159 Mineral Waters in Medicine. C. E. Winslow.
- 160 Notes on Medical Study in Vienna. W. W. Roblee.
- 161 The Pestis Bacillus. Ernest S. Pillsbury.
- 162 The Ideals of Citizenship. J. H. McBride.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

March 21.

- 1 *Theories of Immunity and Their Clinical Application. A. S. Grunbaum.
- 2 The Conditions Which Modify the Characters of Inflammations of the Skin and Their Influence on Treatment. H. Radcliffe Crocker.
- 3 Congenital Goiter. John T. Hewetson.
- 4 Six Cases of Goiter, One Associated with an Attack of Acute Myxedema and Five Successfully Treated with Thyroid Extract. Ed. Marten Payne.
- 5 *The Morbid Anatomy of Erythromelalgia Based upon the Examination of the Amputated Extremities of Three Cases. H. Batty Shaw.
- 6 Prevacinated Smallpox. J. Duncan Howe.
- 7 *Note on the Detection of Raw Milk and Formaldehyd. J. E. Saul.

1, Immunity.—This first lecture by Grunbaum gives the theories of immunity an detailed description of Ehrlich's theory with schemati tions, showing the different active elements assum by the theory. The article requires close reading understanding of it.

sample. There should be no excess of hydrogen peroxid, as it tends to weaken the color. Dilute acids do not affect, caustic alkali destroys the color. The presence in the milk of boric acid, borax, formaldehyd, or sodium carbonate or bicarbonate does not interfere with the reaction. If the milk has become sour, the acid should be neutralized. The temperature was noted at which the active agent in the reaction was destroyed. The milk maintained at 70 C. for one hour reacted readily, but if kept at 75 C. for half an hour, it failed to give the color. It would appear that milk loses its power to react at about the temperature at which enzymes are destroyed. It may be difficult to get the aminophenol derivative above mentioned. He thinks it might be convenient to use the photographic developing agent sold under the name of "ortol," which appears to be a mixture of orthomethylaminophenol sulphate with quinol. The latter body may be removed from it by extraction with ether, but the presence of a small quantity would not interfere with the test, and might even slightly assist it. On adding nine or ten volumes of milk to a 1 per cent. solution of the salt and allowing the mixture to stand, a pink color is gradually produced in the presence of formaldehyd. The reaction is distinct where the milk contains a 1 per cent. solution in 100,000 of formaldehyd or more. The time necessary for the reaction varies with the temperature. It is really an acceleration of the development of a color which ultimately is produced in milk free from formaldehyd. This and the fact that formaldehyd shares the property with other aldehydes and ketones seriously diminishes its value as a test. One, therefore, can not compare it with the modified sulphuric acid reaction of Hebner or the recent "amidol" test of Manget and Marion.

The Lancet, London.

March 21.

- 8 Theories of Immunity and Their Clinical Application. A. S. F. Grunbaum.
- 9 *Some Points in the Anatomy and Pathology of the Vermiform Appendix. W. McAdam Eccles.
- 10 *The Conditions Which Modify the Characters of Inflammations of the Skin, and Their Influence on Treatment. H. Radcliffe Crocker.
- 11 A Case of Acute Splenic Anemia Terminating Fatally with General Bacterial Infection. Herbert P. Hawkins and C. G. Sellgmann.
- 12 *The Height of the Diaphragm in Relation to the Position of Certain Abdominal Viscera. Charles T. Andrew.
- 13 Angina Pectoris: A Criticism and a Hypothesis. E. H. Colbeck.
- 14 A Climatological Aspect of the Nauhelm Treatment of Diseases of the Heart. Leslie C. Thorne.
- 15 Diabetic Gangrene of the Toe; Amputation of the Toe; Recovery. Charles Fisher.

9. The Appendix.—The Hunterian lectures, the first two of which appeared in the "Lancet," March 14, describe the anatomy of the organ, the characters of the normal appendix and the theories of its physiology. Eccles thinks that probably the real function is in part absorptive and in part excretive. In the second lecture the etiology of the inflammation is discussed and he believes that every case of so-called appendicular colic, slight appendicitis, etc., is in truth an actual inflammation of the appendix of bacterial origin. He finds from many authorities that the colon bacillus is the most common infecting agent, 94 per cent., tubercle bacillus 2 per cent., staphylococci and streptococci each 1.5 per cent., and in still lesser proportions the pyocyaneus and prodigiosus. Tuberculosis of the appendix may be only a part of a general infection. Its secondary occurrence is by no means rare. He holds that calculi and concretions are always formed within the lumen. Actinomycosis may occur. One effect of the inflammation is obliteration of the lumen of the appendix, and this may produce a spontaneous cure and is a normal tendency in later life. In order to bring about immunity to a recurrent appendicitis the whole of the lumen should be obliterated. This is not by any means always the case. Secondary abscesses may be due to leaving behind some foci of infection and may occur after complete removal of the organ. The anemia in the appendicitis patient is, he thinks, due to the same cause as the appendicitis, a disordered state of the alimentary tract. He thinks leucocytosis has a certain value in the diagnosis.

In this third lecture, the association of appendicitis with joint lesions and the complications of pregnancy and parturition are first noted. Its association with the latter condition is by no means uncommon and is of very serious import. The

diagnosis is seriously embarrassed in the later months of pregnancy and the history of a previous attack is of the greatest assistance here. Miscarriage or premature labor is almost certain to occur and this brings about a danger to both mother and child. The wisest course, he thinks, is to operate on all cases or those suspected cases in pregnancy at the earliest possible moment, disregarding the fact of the gravid uterus. He does not see any use in artificial emptying the uterus before operation. The somewhat difficult question as to the relation of appendicitis to life insurance is discussed briefly. New growths are described. These are more commonly malignant than innocent, though neither are frequent. Secondary neoplasms are not so rare. The question arises whether previous attacks of inflammation predispose to their occurrence, but the records are deficient as regards this point. While there is scanty evidence of appendicular calculi being a predisposing cause of carcinoma, as biliary calculi are supposed to be, there is something in favor of the theory that previous attacks of appendicitis may have their influence. Hernia of the appendix is discussed at some length. It is probably connected with elongation. Adhesions are common and inflammation of the appendix in the hernial sac is decidedly common. Usually on opening the sac the appendix is readily recognized, but at times, owing to adhesions which are very common and locking together of tissues, it is difficult to be sure what structure is being dealt with. If operation for a radical cure of a non-strangulated irreducible hernia is undertaken and the appendix found in the sac it may be returned to the abdomen or amputated in the usual manner and the stump returned, which is a better plan. If the tube is found adherent, and especially if not of natural size, it is well to free it from its attachments and to remove as much as can be readily drawn down into the sac.

10. Skin Inflammations.—This third lecture by Crocker treats of the action of arsenic, which has its inconveniences in producing pigmentation and even keratosis, but it is valuable in many conditions, among which he enumerates certain forms of angioneuroses, recurring sweat eruptions, pemphigus, dermatitis herpetiformis, etc. He thinks its indiscriminate use, however, makes it more important to point out where it is useless. He sees no good of it in discharging eczemas or wherever there is gastric irritation. He prefers in giving it in liquid form, such as Fowler's solution. Salicin and the salicylates have their value in many conditions and are most likely to be successful in cases of microbic origin, such as psoriasis, lichen planus, pityriasis rosea. In psoriasis the salicylate should be given in dilute doses of 15 gr. three times a day, then increased to 20 or 30 grains, though hardly ever so much as the latter is required. In the majority of cases its action is quicker and it is more successful than arsenic. In some cases of lichen planus it is of use. He thinks it is likely that some drugs breaking up in the organism, like aspirin, may have some similar effects. Thyroid extract has not met expectations, but he has found it decidedly useful in some cases of psoriasis and in Willan's and Hebra's prurigo, eczema on a congenitally ichthyotic skin and lichen acuminatus and has found it more valuable in lupus vulgaris than any internal medication he has given. Ichthyol is sometimes beneficial in hyperemic diseases like acne and in some sweat eruptions. In extensive dermatitis there is no drug he has a higher opinion of than quinin in good-sized doses of 5 to 10 gr. and in an effervescent citrate of potassium mixture. He remarks in regard to subcutaneous and intermuscular injections and says there are certain measures that ought to be adopted in all cases of widespread skin inflammation. These are rest, equability of temperature; sudden changes of temperature are bad in certain cases. For local treatment he thinks we should have a definite aim. Is it the hyperemia that is to be subdued, the exudation to be dried up or the suppuration to be stopped, or is it some micro-parasite that is to be destroyed without increasing the inflammation? Regard should be paid to idiosyncrasy, and he gives, in conclusion, some general deductions: That a large proportion of skin inflammations is of mixed origin, frequently a microbic element exists, and some microbes may pro-

- 49 Functions of Child's Stomach in Digestive Affections. T. v. Hecker.—Ueber die Functionen des kindlichen Magens bei Verdauungskrankheiten. Tables to accompany article in No. 5. Fifty-four cases.
- 50 (LVII, January.) *Abnormal Chondral Ossification in Rachitis. D. Pacchioni.—Beschreibung und Pathogenese der Veränderungen der chondralen Verknöcherung bei der Rachitis.
- 51 *Influence of Sterilization of Milk on Infant Metabolism. W. Cronhelm and E. Müller.—Untersuchungen über den Einfluss der Sterilisation der Milch auf den Stoffwechsel des Säuglings, unter bes. Berücksichtigung der Knochenbildung.
- 52 *Diagnostische Betrachtungen über 3 seltene Formen infantiler Cardiopathien. C. Hochsinger.
- 53 Seltener Fall von Erythema nodosum. E. Führmann.
- 54 Anaerobic Butyric Acid Bacteria in Normal Stools. F. Paschl.—Ueber das regelmäßige Vorkommen der verschiedenen Typen der streng anaerobischen Buttersäurebakterien im normalen Stuhl.
- 55 *Zur Casuistik der Phosphaturie im Kindesalter (in a child). Cornelia de Lange.
- 56 (February.) Ueber die Behandlung des Scharlachs mit einem Scharlach-Streptokokkenserum (serum treatment of scarlet fever) P. Moser. (Commenced in preceding number.) Preliminary report mentioned in THE JOURNAL, xxxix, p. 1145.
- 57 *Ueber Sauerstoff- (oxygen) Inhalationen bei Kinderkrankheiten (in children's diseases). A. Hecht.
- 58 *Eine Scharlach- (scarlet fever) endemie auf der Masern- (measles) Station. A. Doeber.
- 59 *Ueber den Werth der systematische Lumbal-Punktion bei der Behandlung des Hydrocephalus chronicus internus bei Kindern. J. v. Boky.
43. Rocking Chair for Weakly Children.—Epstein urgently recommends a low rocking chair with arms and a broad open space between the back and the seat, for children between 1 and 3 years old as a remarkably effective means of developing the muscles and especially strengthening the back. The child sits in it, facing the back, his feet hanging or touching the floor, or resting on a step made for the purpose on the long rockers. He soon learns to balance himself and rock, and, as he holds on by the back and arms, he acquires an actual military attitude, head up and spine straight, while his delight in the rocking movement inspires him to constantly renewed exercise.
50. Morbid Process in Rachitis.—Pacchioni asserts that the fundamental morbid process in rachitis is not in the bone but in the cartilage, in the protoplasm and in the nuclei of the cartilage cells.
51. Effect of Sterilization of Milk.—Cronheim publishes his research, which confirms the fact that the biologic properties of milk are impaired by the process of sterilization. The exact mechanism is not known, but clinical experiences have established that the lime metabolism is unfavorably influenced. Sterilized milk is not a suitable food for infants for long periods at a time.
52. Rare Forms of Infantile Cardiopathy.—Radioecopy explained the contradictory symptoms in the cases described. In one they were due to defective development of the septum in the common arterial trunk. The infant was 11 months old, and exhibited congenital cyanosis. The origin of the arteries was also on the opposite to the normal side, and the first portion of the aorta was rudimentarily developed, with vicarious enlargement of the pulmonary and permeable ductus arteriosus, with resulting hypertrophy of the heart. In the second case, the boy of 13 had still an opening in the ductus arteriosus, with an aneurismal dilatation of the pulmonary artery and congenital stenosis of the isthmus of the aorta. In another case a boy of 9 had an enormously hypertrophied heart, with adhesions between the pericardium and chest wall, signs of obsolete tuberculous pleurisy. The mitral and aortic valves were also insufficient, and the entire heart was displaced to the left and fastened by tuberculous bands.
55. Phosphaturia in a Child.—The little patient was a girl, not quite 5, and phosphaturia was pronounced for the nine months during which she was under observation. She suffered from helminthiasis, and there is a possibility that this fact may have had some connection with the phosphaturia.
57. Oxygen in Diphtheric Stenosis.—In Hecht's experience with 9 cases of diphtheric laryngeal stenosis, the respiration was favorably affected in 2. Study of the details of these cases shows that inhalation of oxygen is always indicated when the heart action is growing weak, manifested by tachycardia. It should be kept up until the beat grows slower and, of course, be suspended if it increases the tachycardia.
58. Simultaneous Scarlet Fever and Measles.—In the epidemic of 10 cases of scarlet fever in the measles ward, it was noticed that diarrhea preceded the exanthem in 6. The fleeting character of the eruption was also noticeable and the severity of the complications. Doeber's experience warns that the simultaneous occurrence of these two diseases must be carefully guarded against.
59. Value of Systematic Lumbar Puncture in Hydrocephalus.—When the hydrocephalus is congenital, the alterations in the parts are usually so severe that merely a palliative effect is to be hoped for. But in cases of the condition following meningitis or other cause, it may be possible to realize a complete cure by this means. In one case described all symptoms of the chronic hydrocephalus had vanished by the end of eight months, during which time 283 c.c. of cerebrospinal fluid had been withdrawn in eleven punctures. In another case a boy of 2, with hydrocephalus consecutive to cerebrospinal meningitis, showed remarkable improvement until his death from an intercurrent infection. He was treated in the course of two years by lumbar puncture repeated fifteen times, with escape of 660 c.c. of fluid. Concetti repeated the puncture fifty-three times in two years in one case with marked benefit.
- Muenchener Med. Wochenschrift, Munich.
- 60 (L. 8.) *Prognosis of Gin Liver. H. Ehret.—Zur Kenntniss der Prognose der atrophischen Leber-Cirrhose.
- 61 Ueber die Wiener'sche Methode zur Virulenz-Steigerung (increasing) der Danysz-Bacillen. M. Oettinger.
- 62 *Zur mikroskopischen Technik. T. Sato.
- 63 *Laryngeal Tuberculosis in Pregnant Women. Löhnberg.—Die on.—
Eine für
Augenuntersuchungen.
- 65 *Training and Treatment of Hereditarily Burdened Children at Home and in the School. H. Pfister.—Die Erziehung und Behandlung seelisch Belasteter in Haus und Schule. (Commenced in No. 7.)
- 66 (No. 9.) *Ueber die mechanische Sterilisierung der Gummihandschuhe (of rubber gloves) und ihre Verwertung in der Praxis. O. Wandel and O. Hoehne.
- 67 *Spinalgie als Früh (early) Symptom tuberkulöser Infektion. J. Petruschky.
- 68 Theocin (theophyllin), ein neues (tu-
mors). C. Ehrlich.
- 69 *Ein Beitrag zur Casuistik der
- 70 *Die Skopolamin- (Hyoszin) Morphium-Narkose. Schneiderlin.
- 71 *Suture of Femoral Vein and Its Indications. A. Schönwerth.—Ueber die Naht der Schenkelvene am Leistenbunde und ihre
- 72 Ueber (intoxication with water of ammonia, ... case).
- 73 *Behandlung der fibrinösen Pneumonie mit Hæmol-Injectionen. Krone.
- 74 Ueber Hautgeschwüre (cutaneous ulcers) gonorrhöischer Natur. O. Salomon.
- 75 Ist der Lupus erythematosus ein Tuberkulid? A. Gunsett.—
- 76 Zu ofessionellen Erkrankungen (affections) (domain). Steiner.
- 77 Casuistischer Beitrag zur urämischen Amaurose. Roscher. One case.
- 78 (No. 10.) *Movability of Grooved Liver. Penzoldt.—Ueber die Beweglichkeit des abgeschnürten rechten Leberlappens.
- 79 Fall von "interstitieller Gravidität" geheilt durch Operation. Von Holst.
- 80 *Wie lässt sich die Rectum-Exstirpation zu einer aseptischen und unblutigen Operation gestalten? F. Wenzel.
- 81 *Indikationen für operativen Eingriffe beim Rektum-Carcinom. O. Witzel.
- 82 Beitrag zur Ovariectomie in der Schwangerschaft (pregnancy). W. Thomass. One case.
- 83 Comparative Tests of Disinfecting Power of Old and New Preparations of Mercury and Phenol. F. Hammer.—Vergleichende Versuche, etc. Quecksilber und Phenol-Präparate.
- 84 Ueber die Beziehungen zwischen (relations between) Epilepsie und Migräne. W. Strohmayer. Frequent coincidence.
- 85 Anomalies in the Cardinal Veins. S. Oberdorfer.—Varle-täten im Gebiete der unteren Hohlvene.
- 86 *Beitrag zur Symptomatologie des Prostata-Carcinoms. H. Doerfler.
- 87 Zur Casuistik der Prostata-Geschwülste im Kindesalter (tu-mor in a child). L. Levy.
- 88 Outline of Plan for Organization of the Profession in Bavaria for Economic Purposes.—Entwurf des Planes einer Organ-isation der bayer. Aerzte bezw. Aerztervereine zu wirtschaftl. Zwecken.
60. Prognosis of Gin Liver.—The postmortem findings in the case described revealed unmistakable evidence of old liver cirrhosis with atrophy, confirmed also by the history of an abrupt, stormy attack of the symptoms familiar in this affection. The man was 42 years old at the time and an immoderate drinker. He abandoned the use of alcohol on his physician's advice, and all the symptoms gradually retrogressed, until he

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had clinically recovered. Thirty years later he succumbed to a rapidly developing carcinoma of the esophagus, without ever having exhibited any further symptoms of a liver affection in the interim. The liver was found adherent to the spleen and the development of collateral circulation through this organ may have been responsible for the absence of congestion and ascites. If the morbid process is arrested before all the liver tissue is destroyed, it is evidently possible for the remaining portion to compensate it and for the patient to clinically recover. Total abstinence from alcohol is the *sine qua non*. The morbid process is liable to continue even with small amounts of alcohol, and it is far more difficult for a drinking man to restrict himself to continual small amounts than to accustom himself once for all to total abstinence. Besides abstinence from alcohol, small doses of digitalis and potassium iodid will be found useful, the former improving the arterial circulation through the liver and the latter stimulating the metabolism in general. Congestion in the portal region is best combated by laxative salts (Carlsbad, Marienbad, Vichy, Vittel), or by calomel. Withdrawals of small amounts of blood over the region and at the anus are also useful. The ascites should be treated by puncture, systematically repeated whenever the accumulated fluid reaches a certain amount, as only under these conditions is puncture really curative. It is very rarely that the puncture can be substituted by diuretics, although the latter should be tried and also sweat baths in certain cases. The peritonitis, which so frequently accompanies liver cirrhosis, is an important aid in the cure, as it results in adhesions which in turn aid in collateral circulation. If the congestion and ascites can not be conquered in any other way, Talma's operation should be performed. The physician should be convinced that liver cirrhosis is far from having the hopeless outlook formerly attributed to it.

62. **Technic of Microscopy.**—Sato has found that a sheet of colored glass interposed between the mirror and condensor will render the microscopic field as clear and distinct by artificial light as by daylight. The complementary color to the stained preparations is usually the best, but others are frequently equally effective. He has found gelatin paper very nearly as good as glass, and adds that unstained gelatin paper will be found a useful substitute for cover glasses.

63. **Laryngeal Tuberculosis in Pregnant Women.**—Löhnberg has had occasion to observe 5 cases of laryngeal tuberculosis in pregnant women in the course of two years. In 2 there were no indications of tuberculosis elsewhere, and in the rest and in those reported by Türk the laryngeal lesions far overshadowed the others. He has collected 21 similar cases in the literature. The evidence is in favor of the assumption that pregnancy affords a predisposition to this affection and whips into a gallop a latent process. Further, that every pregnant woman with diffuse laryngeal tuberculosis is irremediably doomed, and possibly also those with merely a single tubercle. The only treatment is the palliative use of a menthol-orthoform emulsion, but this lost its efficacy after a time in his cases, and relief was obtained with morphin and tablets of cocain alone. The only effective measure against the hopeless laryngeal tuberculosis of pregnant women is that tuberculous women should not marry, and, if married, should not conceive. Pregnant women should be carefully examined at the slightest suspicion of trouble in the throat, and should be placed in the most favorable conditions of nourishment and hygiene. In case of advanced laryngeal tuberculous lesions, extensive use of every means to allay the pain is certainly indicated.

65. **Training and Treatment of Inherited Nervous or Mental Weakness.**—Serious injury may be inflicted on a child with a hereditarily weak nervous system by even a moderate box on the ear. The concussion of the brain may have a long train of effects, especially when combined with the pain, mortification and anger usually accompanying such a scene. Plutarch used to complain that the slaves that were not good for anything else were made teachers for the children, and Martin Luther and other writers since have echoed his experience in regard to teachers. A Suabian writer named Häberle kept a record of the number of blows he received during his childhood,

and he states that they reached a total of 911,527 with a cane, 124,010 with a switch and 1,151,800 boxes on the ear. At the present day the children suffer more from overtaking of the brain than from corporal punishment. What is easy for the normal child is a direct strain on children with a nervous or mentally defective heritage. Koller found 59 per cent. of such children among 370 supposedly healthy school children, and Benda 50 per cent. in the upper grades. The mental work required of such children should be graduated to their capacity, and even physical exercise should not be allowed to fatigue them. They should have frequent but brief exercise in the open air, with rest afterward. In selecting an occupation, young people with an overburdened heredity should be guided away from those requiring much nervous or mental strain. In regard to marriage, young men showing only moderate effects of such heredity should be advised to marry young, while those with pronounced manifestations should be warned against matrimony, as the cares of married life outbalance for them its advantages. Girls of this class should marry late, not until after 24 or 25, to allow them to attain their full physical development before encountering the stress of pregnancy and childbirth. In all cases, marriage into a healthy family is indispensable. The crossing of two such morbid strains is disastrous. The above are only a few points out of Pfister's long article, which is based on his extensive experience as assistant physician to the psychiatric clinic at Freiburg.

66. **Mechanical Sterilization of Rubber Gloves.**—Experiments at Kiel have demonstrated that rubber gloves can be effectively sterilized after using by washing them, still on the hands, with soap and water for a few minutes. It is not necessary to use a brush or antiseptics. After washing them on the hands they are pulled off wrong side out and washed on this side, and filled with water to discover any crack. They are then dusted with talcum powder and wrapped separately in a sterile cloth, when they are ready for use again at any time. The tabulated tests showed that the smooth surface of the rubber does not retain germs like other substances, but allows of perfect cleansing by merely mechanical rinsing. The tests were made with staphylococci and streptococci, the colon, prodigious and other pathogenic bacteria.

67. **Spinalgia as Early Symptom of Tuberculous Infection.**—Petruschky has noticed that "pains between the shoulder blades" is a frequent complaint of persons who later exhibit symptoms of tuberculosis. He thinks that they have some connection with a primary tuberculous inflammation of the bronchial glands, and can, therefore, be accepted as one of the earliest signs of the infection. At a recent autopsy he discovered recent secondary infection of one apex, with evidences of old tuberculous lesions in the bronchial glands, although nothing during life had suggested the possibility of tuberculous infection, and the child had died from scarlet fever. He affirms that it is possible to detect the presence of the primary bronchial involvement by the spinalgia referred to above, the typical sensitiveness to pressure of certain vertebrae between the second and seventh dorsal. They show a trace of lordosis usually, and appear to the finger to be a little broader, softer and more elastic than their fellows. The symptom is valuable only when these spinous processes are distinctly more sensitive to pressure than the others. The diagnosis of tuberculosis was confirmed by the tuberculin test in all but 2 out of 79 cases of this spinalgia, while none of them developed a spinal affection; 32 were children under 16, and 45 were adults. In only 14 were any signs of tuberculosis to be discovered in the lungs at the time. On the other hand, spinalgia was scarcely ever observed in advanced tuberculosis. Primary infection of the bronchial glands is a more dangerous lesion than when the glands in the neck are affected, although infection from the latter is liable to spread to the bronchial glands at puberty. Petruschky is an advocate of tuberculin treatment as the most rational and certain of all means of preventing general infection from glandular lesions.

69. **Tumors of Pancreas.**—Ehrlich illustrates a case of endo-thelioma and of sarcoma of the pancreas, both diagnosed as an ordinary cyst. He emphasizes that the most apparently

harmless cyst in the pancreas may prove to be a malignant tumor when there is no history of trauma to explain it, and exploratory puncture should therefore be systematically avoided on account of the danger of disseminating particles of malignant tissue. Both patients died, one in a few days and the other in less than four months. The first was a woman of 57 and the second a man of 66. Neither presented the appearance of malignant disease except that they were somewhat pale and thin.

70. The Scopolamin-Morphin Narcosis.—Schneiderlin was the first to systematically apply this method of narcosis, and he here relates his later experiences with it. The patient is in a tranquil, drowsy state and thus is obviated the psychic shock which is frequently an important factor in the by-effects of anesthesia. Another advantage is that the anesthetic is dispensed with, while the method is free from danger if correctly done. The susceptibility of the patient is tested by a preliminary dose which causes some delay, and the respiration must be supervised for some time after the operation. These are the only drawbacks. His technic, except for emergency cases, is as follows: He tests the patient with a preliminary dose of first .8 to 1 mg. scopolamin (hyoscin) and then 2 cg. of morphin, usually on separate days. On the day of the operation he gives .8 to 1.25 mg. of the scopolamin and 2 to 3 cg. of morphin an hour and a half before commencing the operation. If, fifteen minutes before the operation, the narcosis is not sufficiently profound, he continues with .2 to .4 mg. of scopolamin and .5 to 1 cg. of morphin. Neither of the drugs alone produces insensibility, while the combination of the two at half the dose is followed by complete anesthesia. He gives a table of a number of cases in which extensive tests of the drugs were made with several days' interval at times between them so as to exclude the influence of after-effects. He also reports some emergency cases in which he operated at once. In one, for instance, he removed the glands in the axilla from a physician. At 12:30 he gave 1 mg. Sc. and 2 cg. Morph. At 1:45 he gave .8 mg. Sc. and 2 cg. Morph. At 2:15 the insensibility was complete and the operation was commenced. A similar operation on another patient was undertaken at 1:30 after an injection at 12 of 1 mg. Sc. and 3 cg. Morph. An abdominal hernia on a third patient was treated by radical operation commencing at 2 after giving at 12:30 an injection of 1 mg. Sc. and 4 cg. Morph., and at 1:45 another of .4 mg. Sc. and 1 cg. Morph. The patient must naturally be supervised afterward until return of consciousness, that asphyxia may not follow the falling back of the tongue or blood flowing into the throat. One of his patients was left alone, contrary to directions, after extraction of teeth, and the larynx became obstructed from hemorrhage, causing a condition of asphyxia requiring artificial respiration for several hours. When this method of narcosis has failed in the hands of the few others who have reported such an experience, the failure was due to the lack of preliminary testing, or too large doses were injected, or the stage of insensibility was not waited for. Fully an hour and a quarter to an hour and a half must elapse after the first injection before complete insensibility is attained and sometimes longer. It is tested by passing a needle through the lip or sticking it in the finger tip or region of the lower lid.

71. Suture of Femoral Vein Near Poupart's Ligament.—Schonwerth incised the femoral vein in operating on septic lesions in the inguinal region in 3 young soldiers. Instead of ligating the vein, he sutured it at once. Notwithstanding the suppuration in the glands, the lesions healed without evident thrombosis, edema or hemorrhage. He, therefore, recommends suture instead of ligature when the suppuration is of a more or less chronic character and restricted to the glands and their vicinity, as in his cases. The after-results are much better than when the task of establishing collateral circulation is imposed on the system.

73. Treatment of Pneumonia with Cinnamic Acid.—Krone was Landerer's assistant at one time, and regards the treatment of tuberculosis with cinnamic acid as a valuable progress. It induces a counter-irritation at the inflamed points, attracts

leucocytes to the spot and conquers the primary inflammation, with a tendency to prevent general infection. By tests on himself he established the harmlessness of this medication to his complete satisfaction, and soon queried whether it were not possible to attain equally favorable results in fibrinous pneumonia. He has thus applied it in intravenous injections, strictly according to Landerer's technic, in 18 cases. In 14 the pneumonic inflammation reacted promptly to the injection, retrogressing rapidly and smoothly and in none of the cases was there general infection. In 2 of the 4 cases in which it failed to exert a favorable influence the patients were alcoholics, with degenerated hearts. He describes several cases in detail. Krone concludes that his unfailing success in the 14 uncomplicated cases indicates that cinnamic acid has an unmistakably favorable effect on fibrinous pneumonia if administered according to rule and in the early stages. It works against the inflammation in its early phases, reduces the fever, facilitates prompt and easy resolution and thus renders the breathing easier and quieter, while it prevents general infection.

78. Movability of Grooved Liver.—Penzoldt has had occasion to see four cases recently in which an apparently movable tumor proved to be a part of the liver separated by a deep groove from the rest, and so movable that it could easily be pushed up into the epigastrium. He thinks it probable that this condition is comparatively frequent, but has been mistakenly diagnosed. The patients complained of discomfort during stooping or working, and the groove was visible on the outer wall of the abdomen. He recommended them to suspend all their lower garments by buttoning them to a stout waist, made like a man's vest, broad on the shoulders and without any tightness around the waist. If the disturbances had been very severe he would have ordered a bandage around the trunk and, in extreme cases, anchored the movable lobe to the abdominal wall. He found that the movability and the disturbances became less as the women took on flesh, and he, therefore, advises fattening the patients as a systematic adjuvant in treatment.

80. Aseptic and Bloodless Extirpation of Rectum.—Wenzel describes Witzel's method of operating in case of carcinoma of the rectum, and states that he has not lost a single patient by sepsis or collapse and has had no recurrences. The indications for operation are given by the fascia recti propria. If the carcinoma has invaded this or passed beyond it, recurrence is almost inevitable, but if it is still limited by the fascia the intervention has every prospect of success. Resection of the rectum is almost certain to be followed by extension of the malignant disease from disseminated particles, and the only advantage is the retention of the natural anus. But as the anus has lost its nerve connections, it very rarely retains its functions and, consequently, any advantage from its retention is usually delusive, while those from extirpation of the rectum as a whole, with the carcinoma closely enclosed in it as in a tight bag, are so obvious and positive that there can be no comparison between the two methods. He prepares the patient for eight to ten days with light food, leaving little residue, fluids alone the last few days, with castor oil and high enemas daily until noon of the day before the operation, after which no fluids are introduced into the rectum. Fifteen drops of tct. op. spl. are given immediately after the last injection, again at evening, the next morning and again one hour before the intervention in a cup of equal parts of tea and brandy. The region is disinfected with a daily sitz soft-soap bath, with a full bath the day before and the day of the operation. The narcosis is according to his morphin and ether by the drop method. This allows an operation of several hours' duration. A soft catheter is inserted and left permanently in the bladder, and the anus is plugged with a small tampon coated with iodine and fastened with two tiers of silver wire sutures, the ends tied in a long loop, which proves a convenient handle later. The operation comprises, 1, extirpation of the coecyx and presacral detachment of the rectum; 2, mobilization of the rectal ampulla and opening of the peritoneum; 3, detaching the anal portion after ligature of the inferior hemorrhoidal artery; 4, ligature of the middle and superior hemorrhoidal arteries in the mesorectum and its

detachment up to the flexure, and 5, amputation of the rectum and making the gluteal anus. He describes in detail the reasons for further particulars of the technic. The deaths in the experience of other operators are due, in the majority of cases, to wound infection or to collapse from hemorrhage, both of which are entirely avoided by this method. The gluteal anus works so satisfactorily by its inherent elasticity and the anatomy of the parts that nearly all his patients have been able to resume their previous occupation.

81. Operative Intervention in Carcinoma of Rectum.—Witzel's first gluteal anus was made seventeen years ago, to remedy a stump too short to bring down to the natural anus. The nurse in attendance was overheard to murmur to herself: "He will be surprised to find it there," and Witzel states that he has been continually surprised since at the excellent functioning of the new anus. He calls it, by the way, gluteal proctostomosis. He has not lost one of the 17 patients operated on by his method from loss of blood or sepsis, and proclaims the principle: small carcinomas, extensive operations; large carcinomas, small operations; that is, merely palliative. He laments that digital examination of the rectum on complaints of "internal hemorrhoids" was neglected until too late for a carcinoma to be operable in 80 per cent. of all that applied to him. One special advantage of his method (see above) is that if the first steps of the operation show that the growth is inoperable or more accessible through a laparotomy, these indications can be complied with before injury has been inflicted on the patient. Among the various palliative operations he has tried he prefers subsartorial colostomosis, that is, he reaches the flexure through an incision above Poupart's ligament, close to the iliac crest. The flexure is drawn out through the aperture under Poupart's ligament and under the sartorius muscle, fastened to the peritoneum and to the skin and then opened after the abdominal incision has been sutured. Still another method is to make an oblique fistula similar to his stomach fistulas which close spontaneously in a few days after the tube is removed.

86. Symptomatology of Carcinoma of Prostate.—Doersler reports a case which demonstrates that a carcinoma developing in the prostate, of such extent that it grows up to the orifice of one of the ureters and breaks through into the bladder, may run its course without inducing any local symptoms, especially any disturbances in urination. The rather frequent micturition observed for a year, but without any symptoms, could scarcely be regarded as pathologic, and could readily be explained by slight hypertrophy of the prostate. The case also demonstrates that a carcinoma in the prostate may cause inflammation of both Poupart's ligaments and extend to the adjacent peritoneum, simulating a periappendicular inflammation with exudate. Evidently these inflammations were transmitted by way of the involved ureter. Differentiating points are the closer vicinity of such exudates to the ureter, possibly also the lesser participation of the general health and of the intestines in the local manifestations. The later course of the malignant disease in this case was completely dominated by the symptoms of an intermittent pyelitis, intermittent accumulations of urine in the renal pelvis. An important point for the etiology of such an intermittent hydronephrosis was the fact noted that the urine collected when the patient stood and vanished on reclining. The tumor in the prostate probably pressed on the ureter when in the erect position while it sank away in the dorsal decubitus. Death was due in this case to total anuria a few days after operation, which indicates that the chronic congestion in the ureter and renal pelvis had impaired the vitality of the kidney.

Therapie der Gegenwart, Berlin.

Last index, p. 681.

- 89 (March.) *Ueber eine neue Klasse von Schlafmitteln (hypnotics). Mering.
 90 *Ueber die (liver) Affektionen mit Quacksilber, über fieberhafte Leberaffektionen (febrile liver affections) und den etiologischen Schluss (conclusion) ex juxta. O. Rosenbach.
 91 *Die Behandlung der Perityphlitis. Ch. Bäumler.
 92 Bemerkungen über den Werth des Theocin. H. Schlesinger.
 93 Klinische Erfahrungen (experiences) über Rhizoma scopoliae carnollivae. L. v. Ketyl.

- 94 Gelatine, ihre (value) in der " " Werth (its dangers and value) in der er. Critical Review.
 95 Zur Kenntnis der (effect of boric acid).
 96 Statistische Beitrag zur Wirksamkeit des Heilserums bei Diphtherie. G. Bundt.
 97 Ueber Ichthalbin. J. Marcuse.
 98 Beiträge zur Wirkung der Moorbäder und Moorumschläge (peat baths and packs) bei Exsudat-Resten nach (celles after) Perityphlitis. F. Straschnow.
 99 *Gleichzeitige (manifold) fang radiogr.
 100 *Zur Heilbarkeit (curability) der Tuberculose. Meissen.

89. New Class of Hypnotics.—The researches of Fischer and Mering establish an intimate relation between the chemical structure and the hypnotic action of drugs. The urea group is requisite but does not suffice alone. It must be in combination with some alkyl containing carbon. The nature of the alkyl is also important. Out of the entire group answering to these conditions the chemical most powerful in its hypnotic effect while most suited for therapeutic purposes, is diethyl-malonyl-urea, which in the intensity of its action surpasses all other hypnotics hitherto known. It has a slightly bitter taste; is readily soluble and in numerous tests on dogs and in the clinic proved remarkably effective in the therapeutic dose which has been established to be .3 to .5 gm. for insomnia and 1 g in agrypnia and extreme agitation. For convenience its long name is to be supplanted by "veronal."

90. Mercury in Liver Affections.—Klemperer has established by the two cases he published in the January number that severe liver affections may be cured by subcutaneous injection of mercury. The effect was so striking that he assumed that the lesions in the liver must have been syphilitic, but Rosenbach protests against ascribing to syphilis every lesion cured by mercury. Their occurrence in a syphilitic is a casual coincidence in many instances. Mercury is not specific against any special virus or microbe, he asserts, but is specific in the sense that it is the means of maximal stimulation or inhibition of abnormal functioning of the liver. By subcutaneous administration we avoid the deleterious action on the intestines. Too strong intestinal reaction interferes with the effect of mercury on the liver. In future he urges that all cases of acute or subacute liver affections should be treated with mercury as soon as possible, in doses too small to be laxative, or by subcutaneous injection. Considerable or continuous fever speaks against lues.

91. Medical Treatment of Appendicitis.—Bäumler has treated medically 187 patients with appendicitis in the last twenty-five years; 124 were men and 63 women. The recoveries were 93.6 per cent. of the men and 90.5 per cent. of the women. The severity of some of the cases can be deduced from the fact that 9 per cent. of the men and 15 per cent. of the women were compelled to remain in the hospital (Freiburg), from 60 to 200 days. He concludes from his experience that a small proportion are doomed unless promptly operated on, but recovery is possible without surgical intervention in the overwhelming majority, even in cases of large pus collections as they may empty themselves spontaneously into the intestine, bladder or vagina and if small may be absorbed. If, after complete subsidence of the attack, local phenomena still are noted, even if only occasionally, the appendix must be removed.

99. Manifold Radiographs Without Plates.—THE JOURNAL has mentioned a recent suggestion that it is possible to dispense with the plate in radiographing and make the exposure directly on the photographic paper. Schuppenhauer has found that two to four thicknesses of the paper can be used and several radiographs taken at once.

100. Curability of Tuberculosis.—Out of the 1,731 tuberculous subjects received at the Hohenhonnef sanatorium in Germany, 208 have been cured for three to eleven years. Of the 278 dismissed as cured, 248 have been followed. Only 40 have grown worse again, and in nearly every instance this could be directly traced to the stress of poverty or overwork. All the others are permanently well. They belong to all classes of society; some of the women have married and borne children. Some have been accepted by the life insurance companies as ordinary risks.

THE NEW ORLEANS SESSION

Description of the Crescent City and Its Environs,
Points of Interest and Details of the Preparations
for the Fifty-fourth Annual Session of the
American Medical Association, May 5 to 8, 1903

NEW ORLEANS.

"Rede the rede of this old roof tree;
Here be trust fast, opinion free,
Knightly right hand and Christian knee;
Worth in all, wit in some,
Laughter open, slander dumb;
Hearth where rooted friendships grow,
Safe as altar, even to foe."

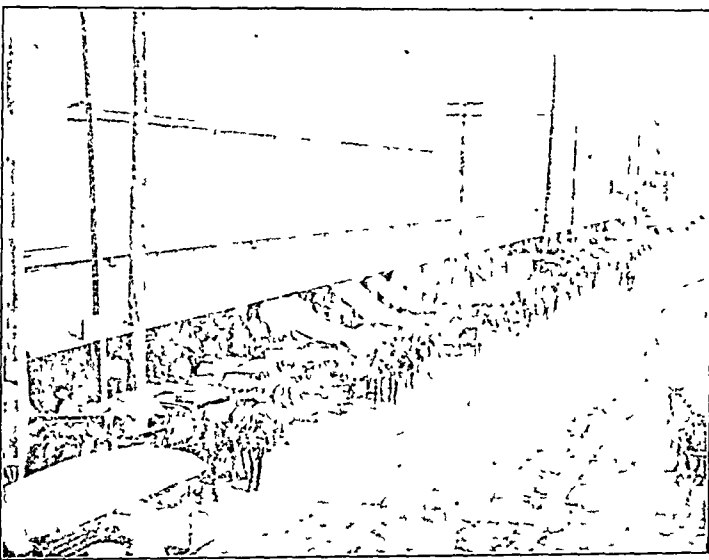
The Crescent City bends and turns with facile form to meet and follow the Father of Waters as it runs in each direction of the compass as it surrounds, almost, the metropolis of the south. We might, in the same breath,

get a mind's picture of what is before him—the medical man especially, as he deals so much in analysis and the speculative.

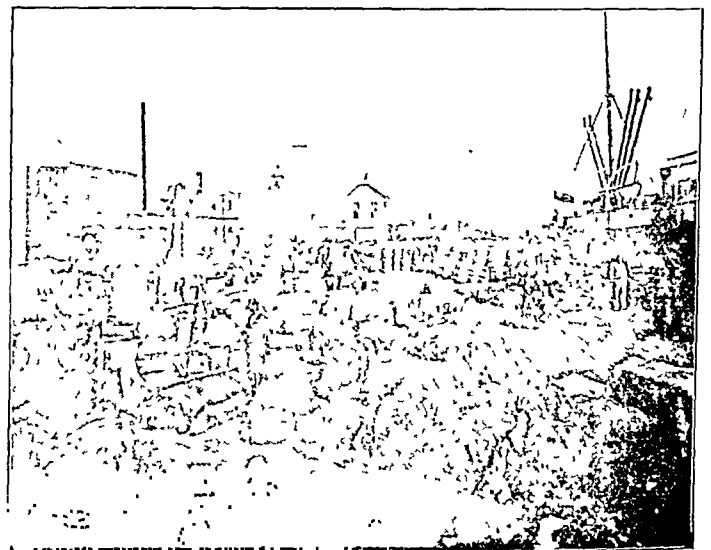
Let us be like the guide book for a moment, to digress as we make the reader interested; and we may not forget that we are writing to advise members of the American Medical Association who are coming to New Orleans.

ARRIVAL IN NEW ORLEANS.

The first thing to do is to find lodgment. If you have reserved accommodations through the Arrangements Committee or not, you should, on arrival, go to the Bureau of Information, at the Washington Artillery



French Market.



The Levee.

say cosmopolis of America, for in its many variants New Orleans bears the earmarks of a foreign people, while in its modern trends it voices the note which the whole United States is to-day sounding for progress. In many ways New Orleans deserves the commentary that she is fifty years behind the times—the truth is one of which many of the multityped population are proud.

How can one best know New Orleans? Baedeker takes a foreign city and classifies it into hotels, restaurants, museums, picture galleries, principal streets, shopping places and suburbs, and after that one changes cars for another burg. Above all New Orleans is different. It is in this that the local color has grown into almost fame. One can not see New Orleans between trains nor over night without having a certain indigestion afterwards. It needs more than just a guide book, too, and as yet the ubiquitous cicerone is a rara avis in the Crescent City. This is hardly the place to make full description, but the intending visitor should

Hall, and there find your location at hotel or boarding house. If you have already received explicit notification of your location, go at once to the address sent you. The Committee on Hotels and Boarding Houses, together with the Information Bureau, will have systematic arrangements for the disposition of all comers, and the bureau will be open from 8 o'clock a. m., Monday, May 4, to the end of the session. It will help the committee if each member will write in advance, stating the number of persons in the party, men, women and children.

The immense crowds at the 1903 carnival were excellently disposed of, and we hope to do better by the American Medical Association.

HOTELS AND BOARDING HOUSES.

Hotel rates have been considered, on both the European and American plans. With boarding houses, it is far better to arrange for bed and breakfast and to lunch at the Artillery Hall, where lunch will be daily provided. Dinner at the famous restaurants of New

Orleans should, by all means, be considered. Many of the boarding houses on the list of the committee will only have rooms without meals, so, in writing,* specific advice should be given if meals and bath are desired with rooms. Remember that the hotels can not accommodate all Association members and their families and outside quarters must be depended on.

The following hotels have rates of \$1.50 and up:

New St. Charles Hotel—Between Common and Gravier streets on St. Charles street. Headquarters of the Association. (See illustration under Association News.)

Cosmopolitan Hotel—Bourbon street, between Canal street and Customhouse street. European plan.

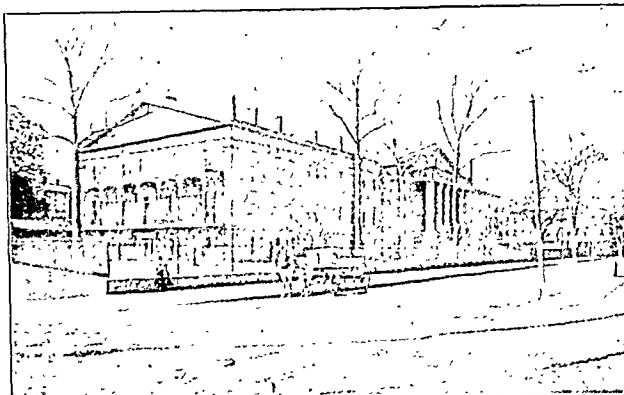
Commercial Hotel—Corner Royal and Customhouse streets. European plan.

Grunewald Hotel—Baronne street, between Canal and Common streets. European and American plan.

Christian Women's Exchange (ladies only)—Camp street (Lafayette square). Rooms and meals.

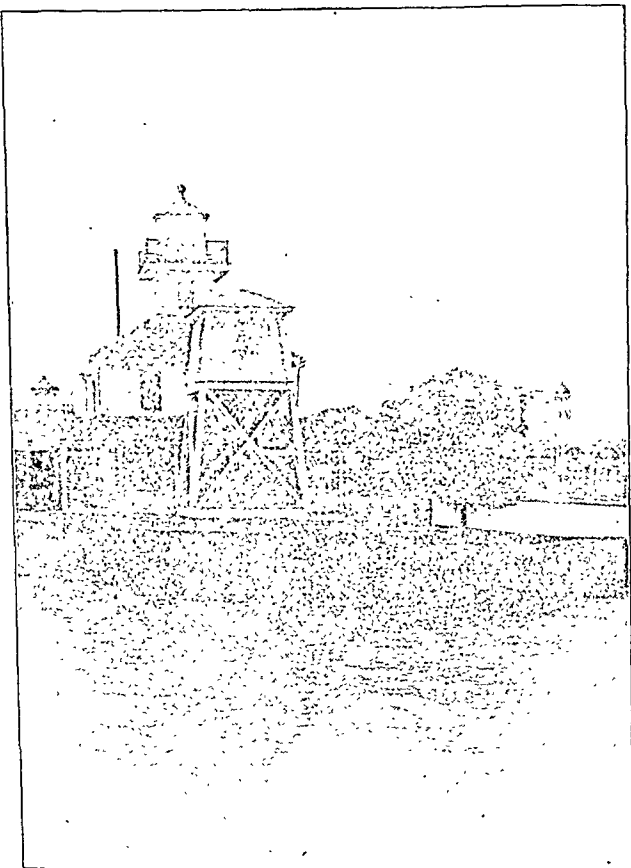
Hotel Bero—226 Bourbon street.

The rates at boarding houses will be \$1 to \$2 a day, per person, for rooms only.



United States Mint.

In taking apartments at hotels or boarding houses, state in advance who you are, member of American Medical Association, and arrange rates. This saves trouble. If any discrepancy arises, report the matter



Light House at West End.

St. Charles Mansion—826 St. Charles street. European and American plan.

Denechaud Hotel—Corner Carondelet and Perdido streets. European and American plan.

The following hotels have rates of \$1 and up:

Fabacher's Hotel—Royal and Customhouse streets. European plan.

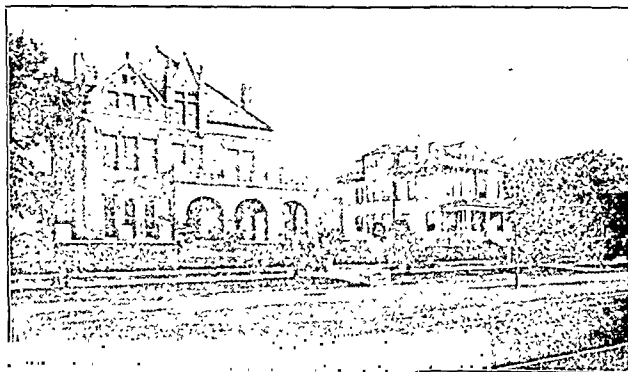
Louisiana Restaurant and Hotel—Customhouse street, between Royal and Bourbon streets. European plan. A few rooms only.

Antoine's Restaurant and Hotel—713 St. Louis street, between Royal and Bourbon streets. European plan. A few rooms only.

Park View House—616 Camp street (Lafayette square).

Osborne Hotel—Carondelet and Poydras streets.

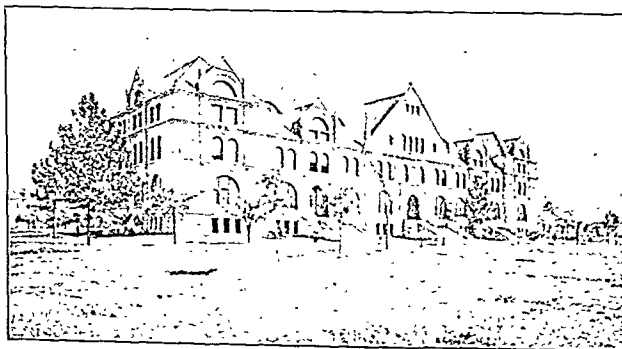
* Write to Dr. E. D. Martin, care Crescent Information Bureau, 810 Common Street, New Orleans.



Residences on St. Charles Avenue.

to the Bureau of Information promptly and they will take the matter up for you.

All hotels are convenient to one another and, while the headquarters of the meeting will be at the New St.



Tulane University.

Charles Hotel, the Sections are as near one hotel as another.

The center of all meetings will be at the Washington Artillery Hall, on St. Charles street, seven blocks from Canal street, the main thoroughfare. The Postoffice,

Registration Bureau, Bureau of Information, General Exhibit, Scientific Exhibit, and several General Sections will be found here. A complete list of Sections and their places of meeting will be found below.

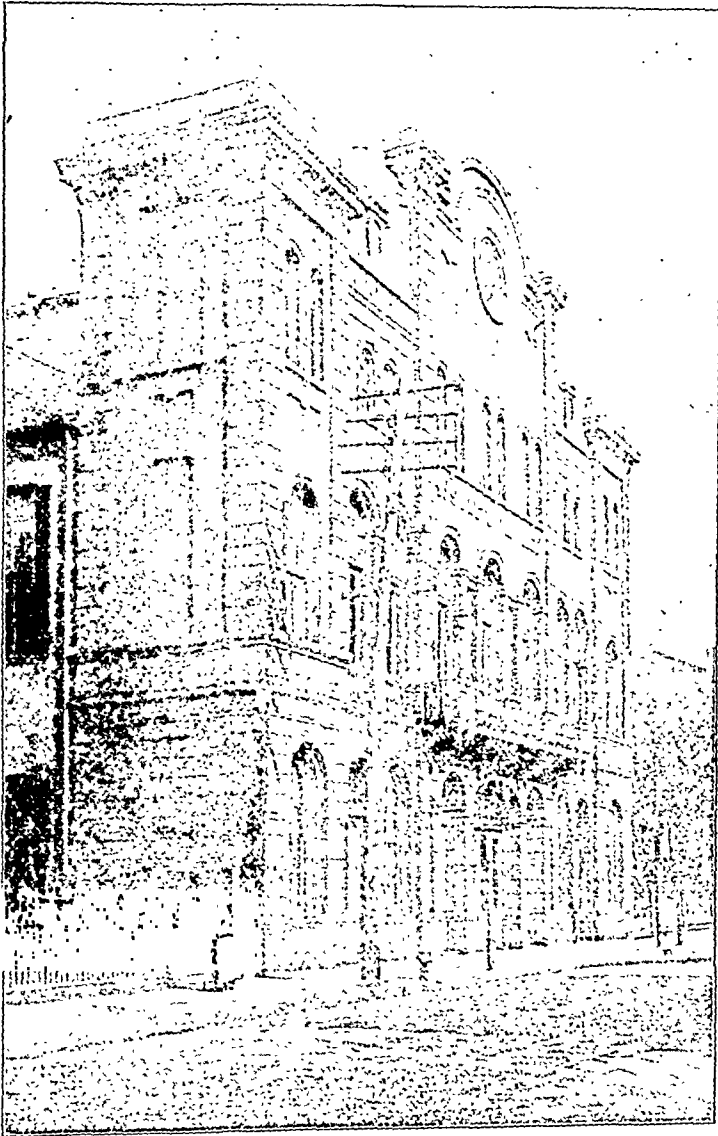
THE FRENCH MARKET.

Once housed, the visitor to New Orleans has much to see and much to do to see it all. There are old places and new places of interest. There are time-worn battlefields, bits of Spain and France of the eighteenth century, traditions galore, and tastes of Creole life and customs, both in the streets and in the shops, much behind closed doors. And where do you wish to begin?

"A line of crimson, low in a gray sky, a ball of fire resting on cypress trees. Long lagoons stretching to the

gascon French; across the road, the gentler Creole accent sweetly persuades the purchaser of excellence in wares, while yet again, not a voice's length away, Italian, Sicilian, Indian, Mexican and Cajan (Acadian) tones are heard.

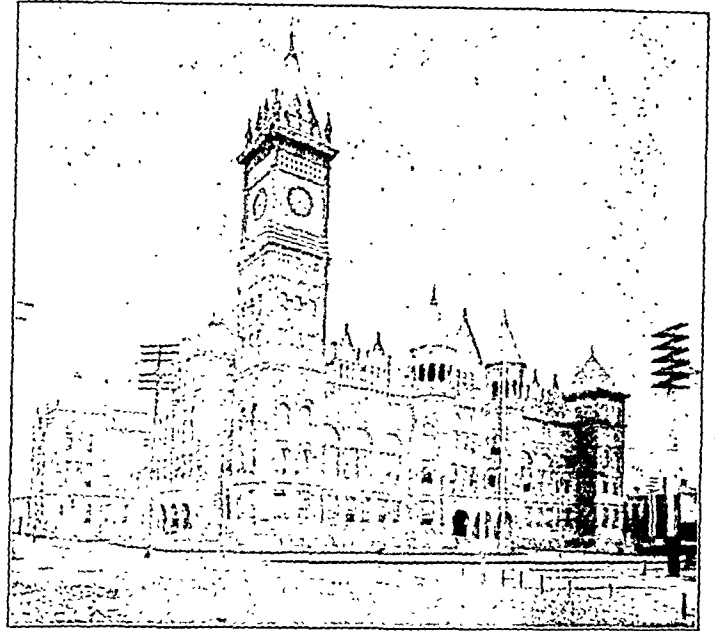
A stranger in the old French Market looks askance at the coffee stands, with their primitive service, but the cleanliness, first, and the appetizing odor of the fresh crullers and French *café au lait* soon make the



Washington Artillery Hall.

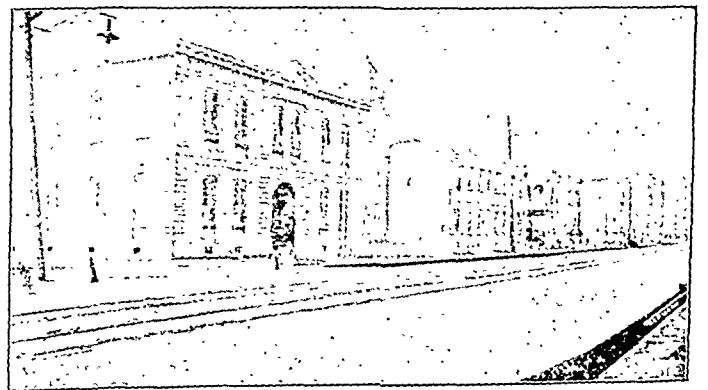
river's edge; a green, idly flowing river, with its silent cargo of sleeping ships; the levee rising against the old market place, with orange boats unloading and fishermen throwing out glistening masses of pompano and red snappers; a warm, soft air from the sea, an old building looming up into the clear light from the fog, a babble of voices, and odor of many things"—so writes a press visitor of the French Market, "the most characteristic and interesting thing to see in this queer town, built in a crescent around a masterful green river."

It is a good place to begin, for here is cosmopolis itself. The butcher may cry his trade with teutonic accent, while his neighbor truckles to his patronage in



Court House.

desire, which comes again the next visit. Much of New Orleans and its traditions center near the French Market, Jackson square, the old cathedral and Cabildo and, on a moonlight night, which we find in May, this *vieux carré* looks like some bit of old Provence, or Tours, transported, with all its Balzacian coloring, to act as the focus for a new Latinity in a newer world. The French quarter of New Orleans has its own traditions, but it is the legendary coloring which makes each of these the



Charity Hospital.

more *genre*. Even to-day the moss-grown courtyards harbor love cotes and, in the same old way, Cupid sends the sparrows by day and the mocking bird by night. But the ghosts of Mme. Delphine, of the Royal street haunted house, of Pere Antoine, all seem to shadow modern innovations as if the city there, at least, were part of an *ancient régime*.

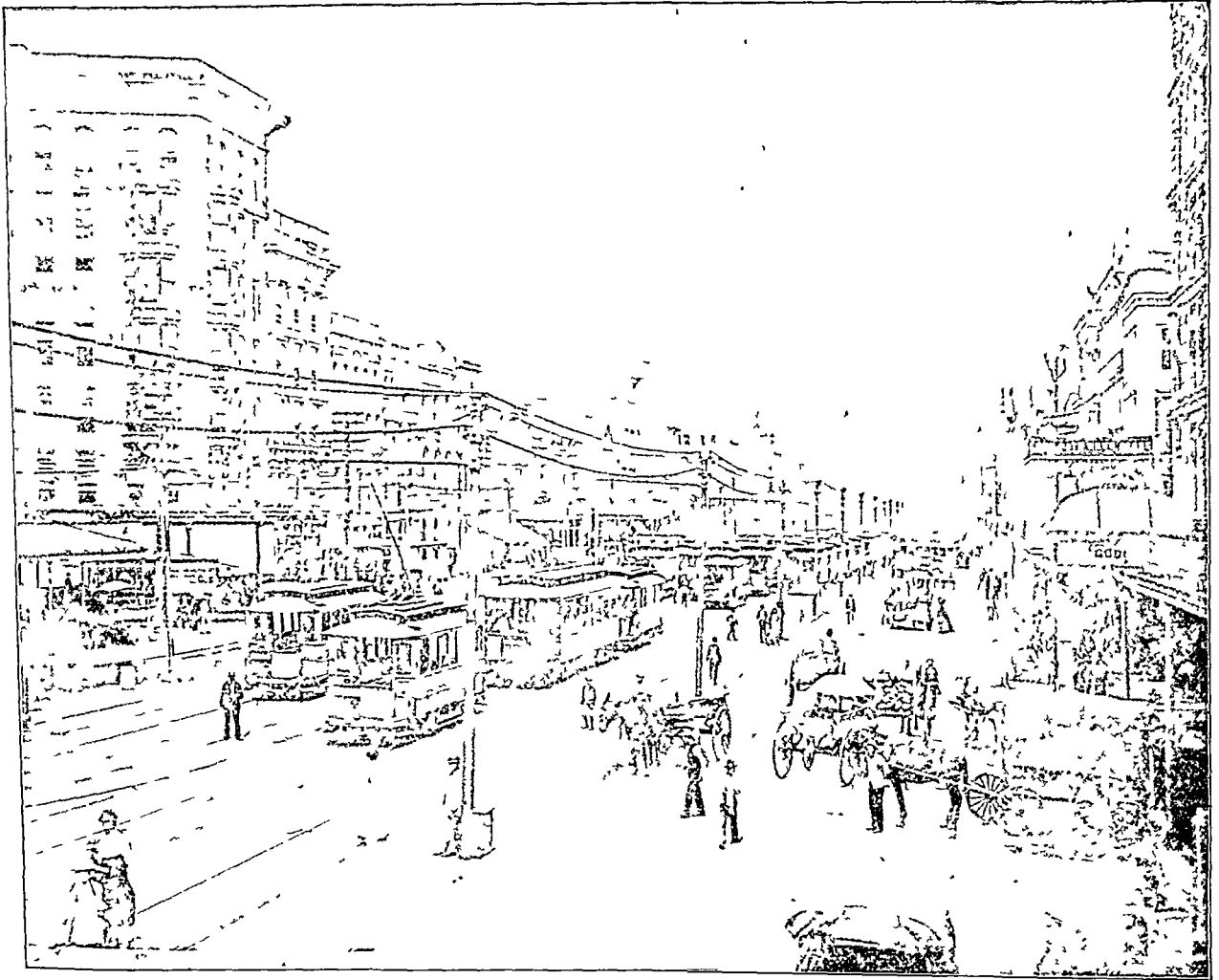
The doorway of some breaking house-front tells of former splendor, in every line telling of the ancestral well-being and, perhaps, opulence. The romances lie

beyond the door, and we find them now and then; amidst poverty there rests an heirloom in some bit of ivory, carved many decades since; a bit of brass, bearing noble arms; a portrait worthy Cousin Pons' collection, a dash of color on a whitewashed wall. The casual visitor does not see all these things, but to one who loves the air, the spirit hovers everywhere in the *vieux carré*.

The very streets in the old quarter are full of the spirit of things. By night the dulcet chime of the old St. Louis cathedral times the echoing footstep of the late pedestrian, who half stops in the shadowing light, as if the very walls should render up some vibrant soul among the old traditions, as the note of some old violin

There are historic points of interest in the old quarter and of a sort to demand some pause. The guide books must tell the detail, but the suggestion may find place here.

The Place d'Armes, now Jackson square, is the point of history for those interested, for it was in one of the old buildings nearby that the Louisiana purchase was ratified. In early times there were no handsome edifices, but a simple church, on the site of the present cathedral—in which to-day rest the remains of the early priest fathers, as well as those of Don Almonester de Roxas, the founder of charities, hospitals and leprosarium. Across the alleyways, on either side, stand the Cabildo



Canal Street.

is roused from a buried past by a sympathetic harmony of some companion note, which passes as it sounds.

By day the balconies bear witness to a foreign land, and beneath them old-fashioned shops invite the passer-by. In Chartres street, hard by, are the stores with birds and beasts and curios of mongrel source. In Royal and Bourbon streets are shops of antiques, of books, of masks and costumes for the carnival—

"Satans and saints and printed clowns
Meet and smile in the motley throng;
And nuns and friars in sober gowns
Lilt their chants with a siren's song;
For all the world is akin, and laid
Under the spell of the masquerade."

and ancient court buildings—to-day sadly in need of care and repair.

Not far down on Royal street, which passes by the old cathedral garden, the iron fret spells the name of the "St. Louis Hotel," latterly the Hotel Royal, for many years a famous hostelry; once the state capitol building, and before the war the place where slaves were sold.

At Royal and St Peter the pink house, that of "Sieur George," "with its stucco peeling off in broad patches, has a solemn look of gentility in rags, and stands, or, as it were, hangs about the corner of two streets, like a faded fop who pretends to be looking for employment."

* George W. Cable's "Old Creole Days"

At Hospital and Royal streets stands the "Haunted House," which by night seems to show its ghostly character; shunned by passersby as if still the shrieks and chains might be heard, or the swish, swish of silken garments speeding through the solitary street.

In the neighborhood are the house of "Mme. Delphine," the United States mint, the archbishop's palace, the famous French Opera, and the Absinthe House, which for many years served as the afternoon and evening club for the professional men of the city, and even to-day preserves its architectural and other pristine qualities.

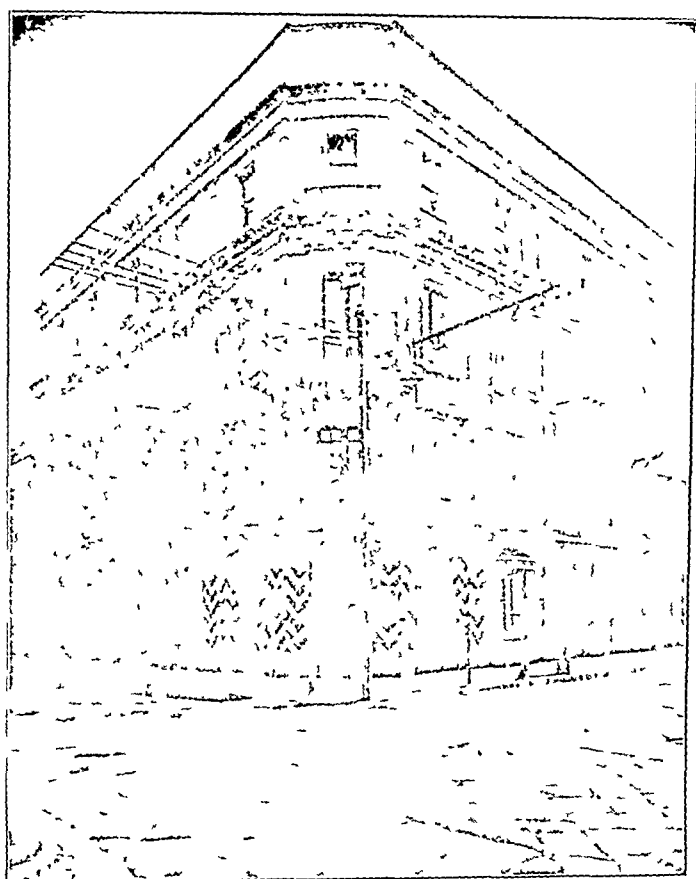
THE RIVER AND SHIPPING.

Canal street is one of the avenues of the world; broad, with central paved portion for cars, not obstructing traffic, it presents a fine appearance.

The beginning of Canal street at the river presents a fair idea of the local river business; the shouts of the

sleepy in its primitiveness, but kept awake by a mill or two puffing away day and night.

Yonder building, tall, on the right as your ferry comes in again, is the sugar refinery, which must be seen from the river on a foggy night to remark its

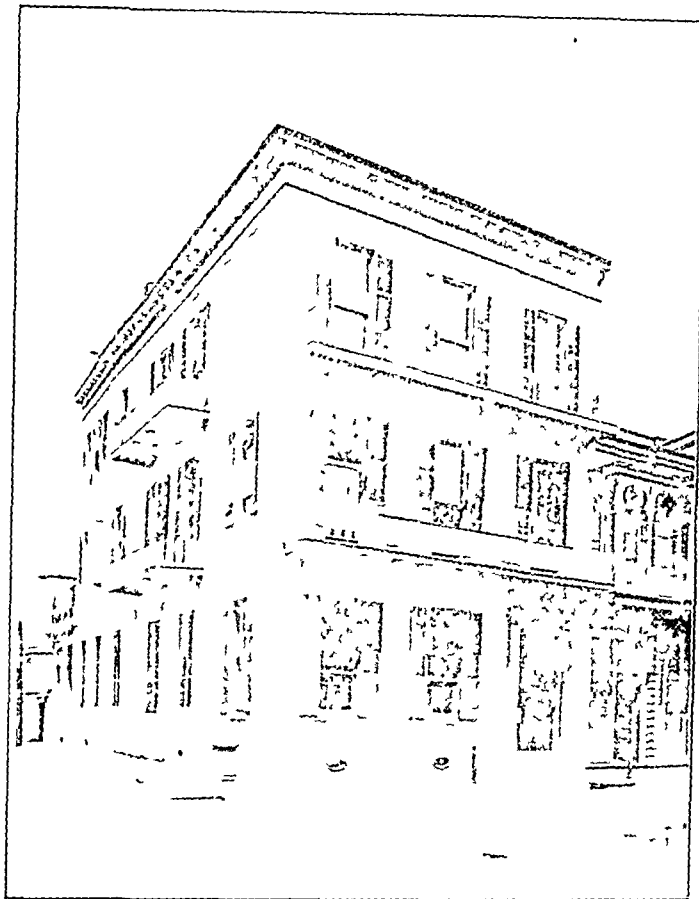


Haunted House

ship's mate, whose invectives are often far more forceful than polite; the running roustabouts, the hurly burly of a varying crowd; the note of a shrill whistle, or some siren sounding down the stream; the gong of the ferry, and the sights of a levee covered with all sorts of things from barrels to bales and from boxes to huge hogsheds.

On the ferry in midstream an excellent view of the foreign shipping may be had: A long line of slanting levees, here and there broken by the expanse of some ocean liner, trimmed in red, or gray, or yellow, with smaller vessels of coastwise proportions between, the snorting of some egoistic steam tug, pushing or dragging some belated burden into port.

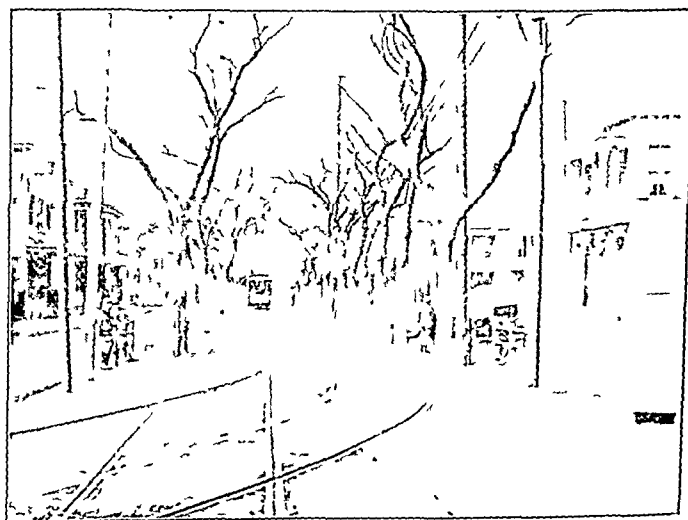
Across the stream, with a background of green cypress, two of New Orleans districts, Algiers and Gretna, lie; the former made prosperous by the Southern Pacific railroad and remaining so on its merits; the other half



Eye, Ear, Nose and Throat Hospital

myriad star-like windows sparkling out in the quiet darkness.

The Louisville and Nashville depot, the Fourteenth of September monument, the customhouse, a row of wholesale houses and retail stores, the Boston Club, the Chess Club, the Grand Opera House, the shopping dis-



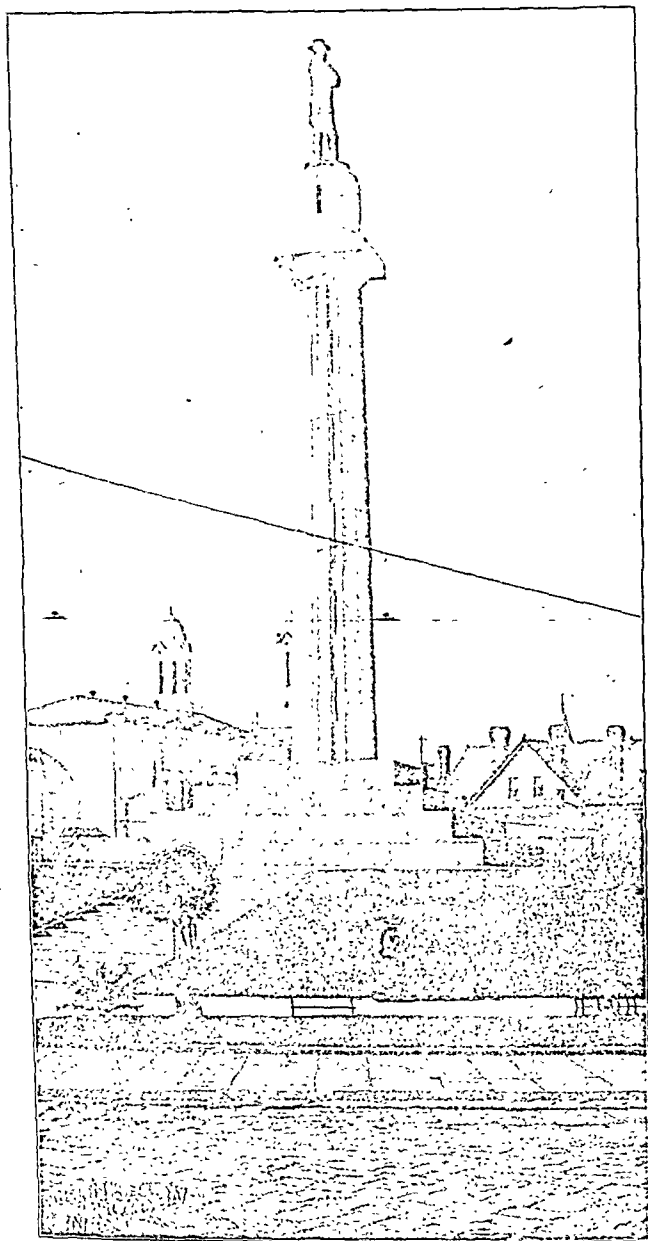
Esplanade Street

trict, the Pickwick Club, old Rampart street, Elk place, the court house, and, straight out Canal street all the way to the beautiful cemeteries, this broad highway runs, passing the Tulane Medical College, Claiborne avenue, the Straight University (colored), a lot of middle-class

homes, until the bayou is reached, the Half Way House and the homes of the dead. Just a bit away is the famous City Park and duelling grounds, and straight on the same electric road lies West End, the breathing spot of the city during the summer months.

This is reached through a picturesque ride past a bit of Louisiana swamp, in which the iris blooms with the dogwood, and where honeysuckle and magnolia flower together. The palms are thick among the moss-covered

Tulane Belt leaves Canal at Rampart, turns out Tulane avenue, passing by the court house, the New Orleans Polyclinic, and the world-famous Charity Hospital, and the Milliken Memorial Hospital for children, on and out by the baseball park and Athletic Park Casino, where, in summer, comic opera holds the boards. You round a curve and then are in Carrollton avenue for a

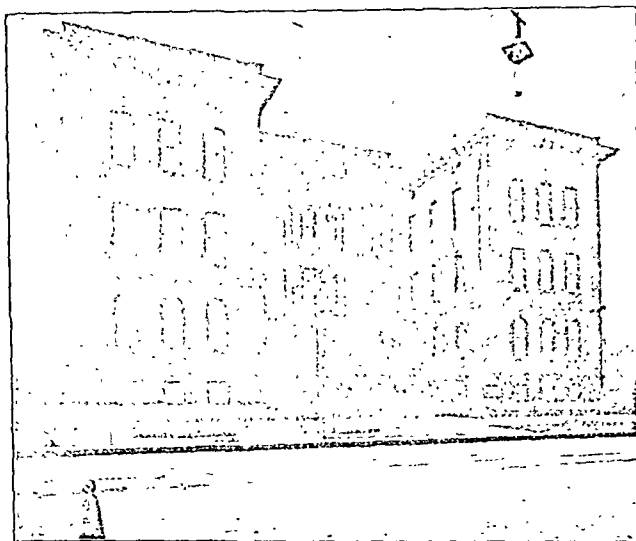


Lee Circle.

trees, and the far note of the wandering crane is sometimes heard.

THE CAR LINES.

Back to Canal street again, one must be struck with the multitude of cars and the ringing of gongs. All cars center in Canal street, and the destination of each and every one is plainly marked. These are the pleasure wagons of New Orleans, and any one of the several lines will show a new part of the Crescent City.



Richard Milliken Memorial Hospital for Children.

long and pleasant suburban spin. Then you enter the farthest extreme of St. Charles avenue, having, by a series of curves, turned until you are headed in the direction of Canal street again. This is the main up-town fashionable thoroughfare, and along it you will see every variety of southern home. You pass by Tulane University and Audubon Park, the Harmony Club, the Athenaeum, Lee Circle, Howard Library, and, reaching



Audubon Park.

Canal again, have traveled a distance of about eleven miles.

St. Charles Belt covers the same ground, only moving in the opposite direction, starting from Canal and Baronne streets.

Esplanade Belt, car going away from the river, goes down Rampart street, past the Ear, Nose and Throat

Hospital, and down a double track for a distance of over a mile is a grove of trees, old as the lordly mansions lining the street on either side. This is the downtown fashionable thoroughfare, and presents the residences of the Creole families; notable in these is the home of the present mayor. Past the Jockey Club the car goes, along Bayou St. John, by the City Park, and into Canal street again and to the point of starting.

The Canal Belt makes the same circuit, in the opposite direction.

Other lines of cars,* with interesting sights, are:

CLAIBORNE AVENUE.—From the river to Claiborne. Points of interest: St. Louis cemeteries; St. Roch shrine; St. Vincent de Paul's cemeteries.

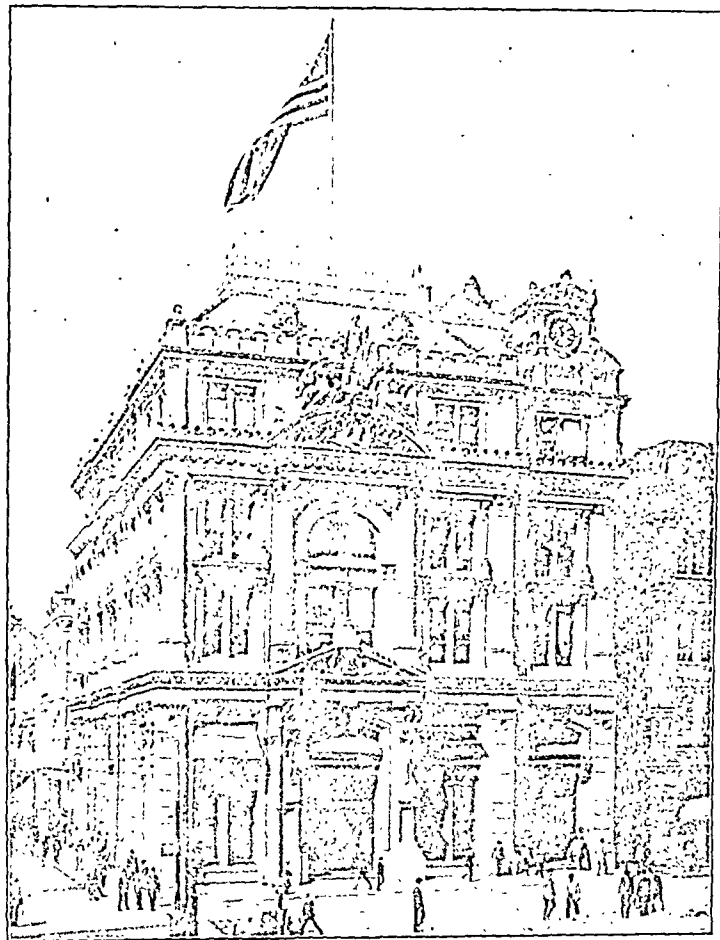
DAUPHINE LINE.—From the river to Rampart. Points of interest: Postoffice, Custom House; through the old French quarter; Usuline convent; United States garrison; Slaughter

Coliseum Square; St. Patrick's Church; Howard Library; Howard's Memorial; Audubon Park.

VILLERE.—From head of river, out Canal to Villere. Points of interest: Direct line to St. Roch's shrine.

TEHOUPITOULAS.—From Canal and Decatur up Tchoupitoulas to Audubon Park. Points of interest: Full view of river front; and along cotton presses; U. S. Marine Hospital; Audubon Park; also Stuyvesant docks and grain elevators.

ERATO.—Carondelet and Canal. Points of interest: New Orleans Cotton Exchange; Margaret's Monument; Annunciation and Clay Squares; Lafayette Square; City Hall; Orpheum and Audubon theaters; St. Charles Hotel; Masonic Temple.



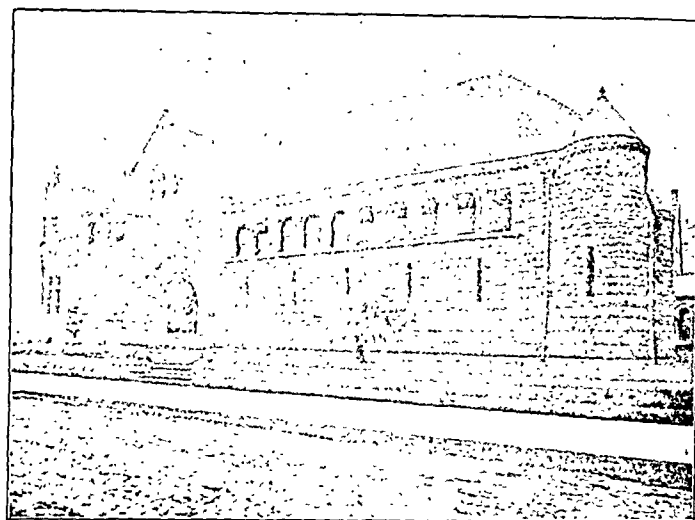
Cotton Exchange.

House. (This car takes you within a short walk of the Chalmette Cemetery.)

LEVEE AND BARRACKS.—Canal and Camp to North Peters. Points of interest: Postoffice and Custom House; St. Louis Cathedral; the Cabildo; the famous old French market; full view of river front; Northeastern depot; transfers to Dauphine car at Poland, which takes you to barracks, Chalmette cemetery and Slaughter House. Also passes Jackson square and United States Mint.

PRYTANIA.—Canal and Basin to Camp. Points of interest: Margaret's monument; through resident section of the city and to Audubon Park; Howard Memorial, Howard's Library, Fisk Library, St. Patrick's Church.

MAGAZINE LINE.—From Basin and Canal out Canal to Camp, up Camp to Audubon Park. Points of interest: Boston and Pickwick clubs; through business section; Lafayette square; Fisk Free and Public Library; Margaret's Monument;

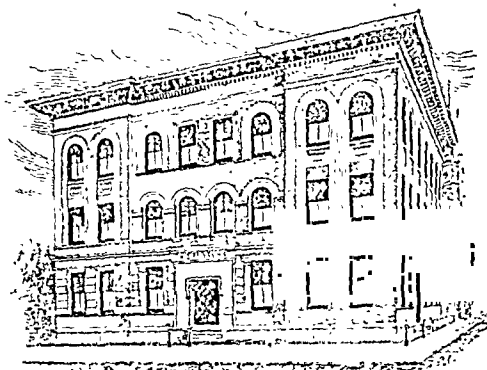


Howard Memorial.

BAYOU ST. JOHN.—Canal and Royal, out Canal to Dauphine. Points of interest: Passing through old French quarter and Fair Grounds.

WEST END.—Canal and Baronne, out Canal to Half-way House; along New Basin to West End; and return by the same route. Headway, summer and winter schedule varying according to travel. Points of interest: Cemeteries and Lake Pontchartrain.

NEW ORLEANS AND PONTCHARTRAIN.—From Napoleon avenue and St. Charles avenue, out Napoleon avenue to Broad; Broad to Washington avenue; Washington avenue to Carrollton avenue; Carrollton avenue to New Basin, and along the New Basin to



New Orleans Polyclinic.

the Half-way House. Returning by the same route. Points of interest: Ride through the suburbs; direct line to cemeteries.

THE RESTAURANTS.

Near Canal street and in the heart of the city is a number of points of interest to be mentioned. The famous Sazerac saloon, where cocktails are brewed, the cuisines of Lamothe's (St. Charles street near Common), of the Gem, and the Cosmopolitan restaurants on Royal and Bourbon streets are to be mentioned.

Around the corner on Custom-house, between Royal and Bourbon, the Restaurant de La Louisiane modestly

* We are indebted to the Feb. 24, 1903, edition of the N. O. Harlequin for this street car guide.

awaits you. On Bombon street Victor affably bids you be seated and invites you to cultivate the gout he shuffles for you. The Absinthe room is just a block away at Bienville street, and it is worth while to try the poison as it is concocted by Felix.

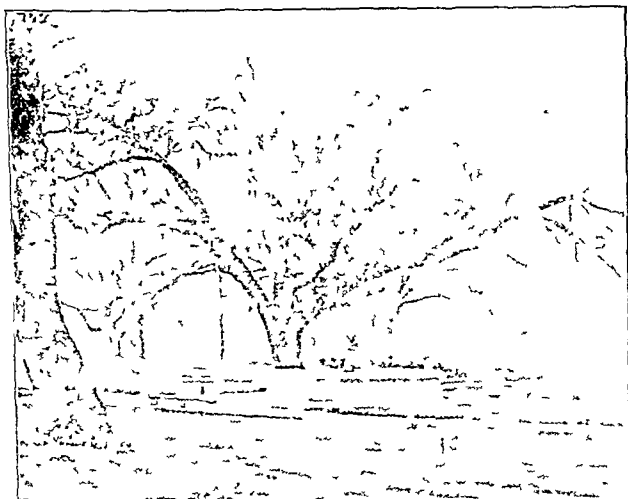
Down by the French Opera, not far away, is Antoine's. When Jules tucks the corner of his immaculate apron in his girdle and pretends to wipe his unsoiled hand, just from his kitchen, to greet his friends' guests, he only shadows the interpretation of a gastronomic genius. There are many things at Antoine's—rather at Jules Alciatore's—to tempt Epicurean taste. Will you try a bit of cuttle fish, or a soft-shelled shrimp, a sliver of true Strasburg pâté, a *bouillabaisse a la maitre d'hotel*, some eggs *matalengua*, a fillet in a casserole, or a chicken trussed and cooked past recognition? Jules knows how it is done. Modest withal, but sure in that art and skill which is as much deserving as the touch of a music stroke, or a tint in flesh tones on a vacant canvas.

Above Canal street, the Cotton Exchange, Board of Trade, and the theaters, five in all and in the season, prosperous enough. But sights are not hard to find.

having been conceived in many sites, the New Orleans Charity Hospital arose on its present site in 1815. From that time the institution has grown in size and importance, until to-day it covers acres of ground, accommodates nearly 1,200 patients and provides facilities for the students of Tulane and of the New Orleans Polyclinic. In 1895 a new amphitheater was completed, modern in its equipment and more recently have been added a complete nurses' home and a hospital for babies and children.

The system of administration consists in a board of administrators, with a vice-president at the head (the governor of the state being the nominal president of the board). The members of this board are appointed by the governor, and have successive terms. The domestic management is in the hands of the Sisters of Charity, while the medical and surgical control is under a resident surgeon and two assistants, the interne and externe services being still further administered by a staff of undergraduates selected by competitive examination from the third-year class of Tulane.

The visiting staff have supervision of the wards and



City Park



St Louis Cemetery

MEDICAL INSTITUTIONS IN NEW ORLEANS.

One always thinks of the Charity Hospital first, and really this is just, for from this old institution have arisen all of the younger hospitals and educational institutions of to-day.

In 1737 Jean Louis, sailor, bequeathed about 12,000 livres to found a hospital ("Hospice des Pauvres"), and this was the beginning of the Charity Hospital. Subsequently Don Andres de Almonester rebuilt it, and it was subsequently destroyed in 1779. Almonester again rebuilt the hospital, the "New Charity Hospital of St. Charles," completing it in 1784, "a commodious, substantial edifice, built of brick and mortar, surrounded by suitable dependencies and provided with a chapel."

On Sept. 23, 1809, the Charity Hospital of Almonester was burned to the ground. The patients were temporarily quartered in the City Hall, afterward being removed to a country plantation, where they all but died of neglect and starvation. After a varied and tragic career,

have control of the out-door clinics, both of which are used for teaching purposes by the Polyclinic and Tulane, under provisions expressly enacted by the state legislature. Besides the Charity Hospital, the Eye, Ear, Nose and Throat Hospital and the New Orleans Polyclinic conduct free out-door clinics for the poor only; the Touro Infirmary also conducts a clinic and hospital, at which those are treated gratis who can not pay.

The Eye, Ear, Nose and Throat Hospital came into existence in 1887 as a necessitous institution for this class of patients, hitherto treated perfunctorily in a limited way at the Charity Hospital. The whole success of the institution is due to one man, Dr. A. W. de Roaldes, who has devoted himself to developing what is the best special hospital of its kind in the South.

The New Orleans Polyclinic arose contemporaneously with this hospital, originally devised to provide a post-graduate institution for upper-class students and doctors. Now in its sixteenth year, with a faculty of seventeen professors and some thirty lecturers and assistants, the Polyclinic owns a handsome building of its own and

* The early Charity Hospital, Dr J J. Castellanos, N. O. Med. and Surg. Journal, July, 1897.

Over the Southern Pacific one quickly reaches the sugar-cane and rice countries, and in St. Mary's Parish and in the Lafourche district find the great Teche country, made classic in the beautiful references in Longfellow's *Evangeline*:
"Slowly they entered the Teche, where it flows through the
green Opelousas."

Regular river boats make this trip in the season and the overhanging Spanish moss veritably shelters the throat-singing mocking bird, where

"The line of shadow and sunshine
Ran near the top of the trees
Swinging aloft on a willow spray that hung o'er the water,
Shook from his little throat such floods of delirious music
That the whole air and the woods and the waves seemed to
listen."

TRIPS TO CUBA AND ELSEWHERE.

Regular steamers run to Cuba, leaving New Orleans Saturday and reaching Havana the Monday following. Rates to Havana and return: \$50 for party not less than 20; there are no steamers that can accommodate more than 60 or 80 passengers.

The Galveston steamboats no longer ply, but river boats go to Natchez and to Vicksburg, and these are interesting trips for those who wish them.

Lookout Mountain, Tennessee—Excursion rate \$25, good for 90 days; if large number goes special rate will be made.

River trip to Natchez, \$12 round trip; Vicksburg, \$16.



Sugar-Cane Fields.

Excursion to San Antonio, Texas: Dr. J. M. Head of San Antonio has arranged a special rate of \$10 for the round trip from New Orleans to San Antonio and back, if 500 members will go. Stop-over privileges will be granted for any point along the line. The entire cost round trip for 3 days, including sleeper but excluding meals, will be \$17. All desiring to take advantage of this trip are urged to correspond with Dr. Head at once.

New York steamers (Cromwell line) leave New Orleans every Wednesday.

MISCELLANEOUS.

There is more than the detail of sightseeing that is interesting in New Orleans. Club life reeks with the glamour of provincial existence, and there is yet time to taste the flavor of *bien aise* after the tasks of the day are done. The stray sound of soft notes on some violin, or a gentle voice in song breathes on the night air in the springtime, and one misses quite the atmosphere of a truly great city.

Some day New Orleans will touch the higher planes of civilization, and what with modern play houses, sen-

sational newspapers and rapid transit we may look in the near future to the destruction of some of the sentiments which still linger even in the every-day life.

Now and then the merry laugh in the tuneful voice of some gentle Creole, or the curious paraphrasing of simple English causes introspective reflection on the trend of the times, and it makes us wonder if after all the new way is really the best.

Congo Square has changed its name; the *vieux carré* is about to have the new court house and modern hotels, perhaps the postoffice, and that with the new paved streets will say good-bye to the shadows which make the sentiment of the Crescent City—because they make the romances. Some old courtyards will remain, and in them the sacredness of their Latinity, but these will be like the atria of ancient Rome, full of the souvenir but barren of the spirit.

So what we may have left unsaid you will see for yourselves, for everyone makes his own pictures, and when the days are gone, besides the fruit gathered in the halls of science, we hope that you may carry away some-



Ruins at Old Spanish Fort.

thing besides the pictures and something besides the sights, for we of the Southland are like the children who beg the kindly stranger to love us just a little.

124 Baronne Street.

ISADORE DYER.

[FURTHER ANNOUNCEMENTS ARE MADE UNDER ASSOCIATION NEWS ON ANOTHER PAGE OF THE JOURNAL THIS WEEK.]

ACUTE ALUM POISONING.—Dr. Julius Kramolik reports the case of a young man, aged 30, who by mistake drank a swallow of an approximately 10 per cent. solution of alum which he had prepared as a gargle for a sore throat. Neither the mouth nor the throat showed any marked reaction to the irritant, but the patient vomited thirty-nine times within the forty-eight hours following. Palpation of the stomach was painful. Mucus was found in the vomitus, mingled with blood, imparting a chocolate color to the mass. The urine was stained by blood, and showed morphologically numerous red blood cells, few leucocytes and few hyaline casts. Traces of albumin were also present. The patient was ill at least thirteen days.—*Pester Medicinisch-chirurgisch Presse.*

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

ANATOMY OF THE BRAIN AND SPINAL CORD, with Special Reference to the Grouping and Chaining of Neurones into Conduction Paths. For Students and Practitioners. By Harris E. Santee, M.D., Ph.D., Professor of Anatomy in the College of Physicians and Surgeons; with a Preface by William T. Eckley, M.D., Professor of Anatomy in the Medical and Dental Departments, University of Illinois. Third Edition. Revised and Enlarged. Cloth. Pp. 226—xxxvi. Price, \$2.00 net. Chicago: E. H. Colgrove. 1903.

A SYSTEM OF CLINICAL MEDICINE, Dealing with the Diagnosis, Prognosis and Treatment of Disease for Students and Practitioners. By Thomas D. Savill, M.D. Lond., Physician to the West End Hospital for Diseases of the Nervous System. Volume I. Local Diseases and Microbic Disorders. Cloth. Pp. 702. Price, \$4.38 net. London: J. & A. Churchill. Philadelphia: P. Blakiston's Son & Co. 1903.

PHYSICAL CHEMISTRY for Physicians and Biologists. By Dr. Ernest Cohen, Professor of General and Inorganic Chemistry in the University of Utrecht. Authorized Translation from the German. By Martin H. Fischer, M.D., Instructor in Physiology in the University of California. Cloth. Pp. 343. New York: Henry Holt & Co. 1903.

A POCKET BOOK of Infant and Childhood Dietetics, with Directions for the Home Modification of Milk. [Duplicate blanks, detachable, for giving to parent or nurse.] By A. B. Späth, A.M., M.D., Instructor in Medicine, Medical Department of the University of Illinois. Pasteboard. Price, \$0.50. Chicago: E. H. Colgrove.

BACTERIA IN MILK AND ITS PRODUCTS, Designed for the Use of Students in Dairying and for All Others Concerned in the Handling of Milk, Butter or Cheese. By H. W. Conn, Ph.D., Professor of Biology. Wesleyan University. 43 Illustrations. Cloth. Pp. 306. Price, \$1.25 net. Philadelphia: P. Blakiston's Son & Co. 1903.

A LABORATORY TEXT-BOOK OF EMBRYOLOGY. By Charles Sedgwick Mlnot, LL.D. (Yale), D. Sc. (Oxford), Professor of Histology and Human Embryology in the Harvard Medical School. With 218 Illustrations, Chiefly Original. Cloth. Pp. 380. Price, \$4.50 net. Philadelphia: P. Blakiston's Son & Co. 1903.

THE ELEMENTS OF PATHOLOGICAL ANATOMY AND HISTOLOGY for Students. By Walter Sydney Lazarus-Barlow, B.A., B.C., M.D. (Camb.), F.R.C.P. (Lond.), Pathologist and Lecturer on Pathology at the Westminster Hospital. Cloth. Pp. 705. Price, \$6.50. Philadelphia: P. Blakiston's Son & Co. 1903.

THE EVOLUTION OF MAN AND HIS MIND. A History and Discussion of the Evolution and Relation of the Mind and Body of Man and Animals. By S. V. Clevenger, M.D., Author of the Medical Jurisprudence of Insanity, 1898. Cloth. Pp. 615. Price, \$5.00. Chicago: Evolution Publishing Co. 1903.

HYGIENE AND PUBLIC HEALTH. By Louis Parkes, M.D., D.P.H., Lond. Univ., Fellow of the Sanitary Institute and Henry Kenwood, M.B., D.P.H., F.C.S., Fellow of the Sanitary Institute. With Illustrations. Cloth. Pp. 763. Price, \$3.00 net. Philadelphia: P. Blakiston's Son & Co. 1902.

THE PREVENTION OF DISEASE. Translated from the German with an Introduction by H. Timbrell Bulstrode, M.A., M.D., D.P.H. In Two Volumes. Cloth. Pp. 1,063. Net Price, \$3.75 per Volume. New York: Funk & Wagnalls Company. 1903.

REPORTS OF THE SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN. Volume II, Session of 1901-1902. Edited by George Carpenter, M.D. Cloth. Pp. 310. London: J. & A. Churchill. Philadelphia: P. Blakiston's Son & Co.

MATERIA MEDICA FOR NURSES. By John E. Groff, Ph.G., Apothecary in the Rhode Island Hospital. Second Edition, Revised and Rewritten. Cloth. Pp. 169. Price, \$1.25 net. Philadelphia: P. Blakiston's Son & Co. 1903.

THE MANUAL TREATMENT OF DISEASES OF WOMEN. By Gustaf Norström, M.D., of the Faculty of Stockholm. Paper. Pp. 230. Price, \$2.25. New York and London: G. E. Stechert. 1903.

THE INTERNATIONAL MEDICAL ANNUAL: A Year-Book of Treatment and Practitioner's Index. 1903. Twenty-third Year. Cloth. Pp. 739. Price, \$3.00. New York: E. B. Treat & Co.

CHRONIC HEADACHE AND ITS TREATMENT BY MASSAGE. By Gustaf Norström, M.D., of the Faculty of Stockholm. Paper. Pp. 59. Price, \$1.00. New York and London: G. E. Stechert. 1903.

BULLETIN OF IOWA INSTITUTIONS (Under the Board of Control) January, 1903. Published Quarterly. Paper. Pp. 141. Dubuque, Iowa: Telegraph-Herald Printing Co. 1903.

TRANSACTIONS OF THE AMERICAN CLIMATOLOGICAL ASSOCIATION. For the Year 1902. Volume XVIII. Cloth. Pp. 270. Philadelphia: Printed for the Association. 1902.

SUPERIOR BOARD OF HEALTH, San Juan, P. R. Rules and Regulations for Guidance of the Health Authorities. Paper. Pp. 93. Puerto Rico: Tip. Boletín Mercantil. 1902.

PROCEEDINGS OF THE SECOND ANNUAL MEETING OF THE MEDICAL AND SURGICAL ASSOCIATION OF MISSISSIPPI at Vicksburg, Miss., April 23 and 24, 1902. Paper. Pp. 18.

REPORT OF THE COMMISSIONER OF EDUCATION for the Year 1900-1901. Volume II. Cloth. Pp. 2512. Washington: Government Printing Office. 1902.

ALBUM OF THE FELLOWS OF THE AMERICAN GYNECOLOGICAL SOCIETY, 1876-1900. Cloth. Pp. 356. Philadelphia: Wm. J. Doran. 1901.

THE TRANSACTIONS OF THE SOCIETY OF ANESTHETISTS. Volume V. Pp. 203. London: John Bale, Sons and Danielsson, Ltd. 1903.

The Public Service.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending March 28, 1903:

P. A. Surgeon W. B. Grove, detached from treatment at Naval Hospital, New York, and ordered to duty at Naval Dispensary, Washington, D. C.

P. A. Surgeon R. W. Plummer, detached from Navy Yard, New York, and granted sick leave for three months.

Asst.-Surgeon J. F. Murphy, detached from the *Glacier* and ordered to the *Monocacy*.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended March 28, 1903:

Surgeon G. W. Stoner, to proceed to Washington, D. C., for special temporary duty.

Surgeon John Godfrey, Department letter of Nov. 22, 1902, granting extension of leave of absence for three months, amended so that said extension shall be for two months and twenty-five days from Dec. 13, 1902.

Surgeon F. W. Mead, granted leave of absence for five days from April 13.

P. A. Surgeon A. C. Smith, granted leave of absence for 15 days from April 8.

Asst.-Surgeon D. E. Robinson, granted leave of absence for two months and fifteen days from April 1.

Asst.-Surgeon J. W. Schereschewsky, granted leave of absence for one day.

Pharmacist R. H. Gibson, Department letter of March 18, 1903, granting leave of absence for twenty-three days, amended so that said leave shall be for eight days from March 9.

Pharmacist Carl Stier, granted leave of absence for one day, under paragraph 210 of the regulations.

PROMOTION.

Asst.-Surgeon M. H. Foster commissioned as passed assistant-surgeon to rank as such from March 11, 1903.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 28, 1903:

SMALLPOX—UNITED STATES.

Alabama: Mobile, March 14-21, 2 cases.
California: Berkeley, March 4-11, 1 case; Los Angeles, March 7-14, 4 cases; San Francisco, March 8-15, 6 cases.
Colorado: Denver, March 7-14, 22 cases.
Delaware: Wilmington, March 14-21, 1 death.
Florida: Jacksonville, March 14-21, 3 cases.
Illinois: Chicago, March 14-21, 12 cases.
Indiana: Elwood, Jan. 15-22, 7 cases; Indianapolis, March 7-21, 29 cases, 7 deaths.
Iowa: March 14-21, Davenport, 3 cases; Dubuque, 1 case.
Kansas: Wichita, March 14-21, 3 cases.
Kentucky: Newport, March 14-21, 1 case.
Louisiana: New Orleans, March 14-21, 4 cases, imported.
Maryland: Baltimore, March 14-21, 2 cases.
New Jersey: Camden, March 14-21, 2 cases.
New York: New York, March 14-21, 1 case.
Ohio: Cincinnati, March 13-20, 17 cases; Cleveland, March 14-21, 1 case; Hamilton, March 14-21, 1 case.
Pennsylvania: March 14-21, Altoona, 2 cases; Erie, 2 cases; Johnstown, 1 case, 1 death, imported; McKeesport, 1 case; Philadelphia, 26 cases, 1 death; Pittsburgh, 29 cases, 4 deaths, imported, 3 cases.
South Carolina: Charleston, March 14-21, 5 cases, 1 death.
Tennessee: March 14-21, Memphis, 1 case; Nashville, 1 case.
Texas: San Antonio, Jan. 1-Feb. 28, 5 cases.
Utah: Salt Lake City, March 7-21, 53 cases.
Washington: Tacoma, March 1-16, 4 cases.
Wisconsin: Green Bay, March 15-22, 6 cases; Milwaukee, March 14-21, 2 cases.

SMALLPOX—FOREIGN.

Belgium: Antwerp, Feb. 14-21, 2 cases, 1 death.
Brazil: Rio de Janeiro, Feb. 20-27, 5 deaths.
France: Lyons, Feb. 21-28, 1 death; Paris, Feb. 28-March 7, 1 death.
Great Britain: Feb. 28-March 7, Dublin, 5 cases, 1 death; London, 2 cases; Manchester, 19 cases; Sunderland, 1 case.
India: Bombay, Feb. 17-24, 74 deaths; Calcutta, Feb. 14-21, 6 deaths.
Mexico: City of Mexico, March 1-8, 9 cases, 5 deaths.
Straits Settlements: Singapore, Jan. 31-Feb. 7, 1 death.
Turkey: Alexandretta, Feb. 21-28, 3 cases.

YELLOW FEVER.

Brazil: Rio de Janeiro, Feb. 20-27, 40 deaths.
Colombia: Panama, March 10-17, 3 cases, 1 death.
Ecuador: Guayaquil, Feb. 14-21, 8 deaths.

CHOLERA—FOREIGN.

India: Calcutta, Feb. 14-21, 68 deaths.
Straits Settlements: Singapore, Jan. 31-Feb. 7, 1 death.

PLAGUE—INSULAR.

Hawaii: Hilo, March 7, 2 deaths.

PLAGUE—FOREIGN.

Africa: Durban, to Feb. 23, 83 cases, 50 deaths; Pietermaritzburg, Feb. 26, 1 case.
Brazil: Rio de Janeiro, Feb. 20-27, 1 death.
India: Bombay, Feb. 17-24, 1,054 deaths; Calcutta, Feb. 14-21, 277 deaths; Mauritius, Feb. 12-19, 4 cases, 1 death.
Mexico: Mazatlan, to March 20, 313 cases, 254 deaths.

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Original Articles.

TREATMENT OF PUERPERAL FEVER.*

C. S. BACON, M.D.

CHICAGO.

The mortality from puerperal fever can be reduced to almost nothing by the proper management of labor and childbed. This has been proven by the results obtained in the best maternity hospitals. Mild cases of infection can not be entirely prevented, but they cease to be a source of great anxiety to the physician and of danger to the mother.

In private practice these encouraging results due to the aseptic management of labor are not obtained because labor is not managed aseptically. In Chicago the mortality from puerperal infection has remained about stationary for the last ten or twelve years. From 5 to 7 per cent. of all deaths of women of child-bearing age are from puerperal infection. It is probable that the same ratio holds all over the state and country. Hence it appears that puerperal infection carries off more women in the prime of life than any other disease except consumption. How much sickness not fatal is due to the same cause can be easily imagined.

These discouraging conditions are due in part, no doubt, to the fact that a considerable number of confinement cases are still in charge of incompetent midwives and women with no training whatever. So far as the responsibility of the profession is concerned the trouble is that the matter of the aseptic management of labor is not taken seriously enough. The frequently repeated observation that many women get along all right in the worst surroundings seems to create a doubt in the minds of many whether all the bother required to manage a labor aseptically is necessary. Then the frequent internal examination and the early and unnecessary operative interferences without proper preparation increase the dangers manifold. The source of all the trouble is, I believe, the failure of both the laity and the profession to recognize the importance of labor and its management. So long as obstetrics is the poorest paid department of medicine, so long will it be the most neglected.

Since the prophylaxis is unsatisfactory the treatment of puerperal fever continues to be an important subject. Ever since the demonstration of the microbic origin of this disease the principles and methods of treatment have changed considerably from time to time. At first much was expected of the antiseptic applications and irrigations. Many of you will remember that fifteen years ago sublimate vaginal and intrauterine douches

were generally recommended in all cases of infection. Experience soon proved their uselessness as well as danger. Not only were serious and fatal cases of general intoxication reported, but the local effect of the solution on the vaginal and uterine tissues was detrimental. The hope of killing the germs with the microbicidal solution was vain, because, as we soon learned, the sublimate had very little penetration and the great mass of bacteria was beyond its reach.

The direct application of antiseptics or caustics to the infecting germs and the dead and ulcerated tissues is possible only in the vulva, the vagina and the vaginal portion of the cervix. Here nitrate of silver, carbolic acid and other milder caustics may be applied to the well-exposed puerperal ulcers with the effect of hastening the separation of the sloughing tissue and limiting the amount of absorption of toxins and favoring and shortening the inflammatory process. If these applications be made with care so that not too much injury be done to healthy or uninvolved tissue they may be of value. We must remember that the most radical treatment can not destroy all microbes. The best we hope to do is to assist in removing contaminated and sloughing tissues. Keeping this principle in mind some effort may be made to treat antiseptically the accessible vaginal and vulvar infected wounds.

When the uterus is infected we can only hope to remove, first, decidua and placental debris in which microbes find a favorable soil for growth, and second, the toxic products which, if absorbed, caused the general systemic disturbance. Two kinds of microbic disease are generally recognized. One is a true infection, caused usually by streptococci and staphylococci, which may invade living tissues and not only produce poisons that cause general intoxication, but also injure the local tissues and by means of the circulation migrate and cause remote injuries. The other microbic disease is called a sapremia or saprophytic disease, and is due to germs that live only on dead or dying tissues. This disease is largely an intoxication from absorbed products of these saprophytes. Considerable doubt has been thrown on the reality of this distinction. First, it has been shown that in many cases diagnosed clinically as saprophytic, parasitic bacteria have been found. Secondly, supposed obligate saprophytes have been found to invade the uterus like true parasites.

The view that a true infection is always very dangerous and attended with serious symptoms is disproved by bacteriologic examinations. Staphylococci, and even streptococci, are found in very mild cases where there is only fever for a day. Very serious symptoms often mark a saprophytic intoxication. The diagnosis can be made positively only by a bacteriologic examination, and then is often uncertain on account of the presence of both

* Read before the Southern Illinois Medical Association, Nov. 6, 1902.

parasites and saprophytic germs. Without an examination we can only assume that a given case is a sapremia when there is a stinking discharge, because many of the saprophytes produce a foul-smelling gas while the parasites do not. If all symptoms disappear permanently after the removal of the uterine contents we can then say that the case was probably one of saprophytic disease.

In the case of puerperal saprophytic intoxication, it is only necessary to remove the debris in which the germs live to cure the disease. If there be free drainage from the uterus to carry off the products and the debris as it is gradually formed, the disease will terminate spontaneously with few symptoms beyond the foul-smelling lochia. If, as often happens, drainage is interrupted by occlusion of the cervical canal, it should be restored or the debris should be mechanically removed. This may be accomplished either by irrigation or by the use of the curette.

If irrigation be employed sterile water or normal salt solution should be used. Since the only object of irrigating is to remove debris a harmless is as good as an antiseptic fluid and to be preferred because of the danger of poisoning from the latter. One intrauterine irrigation of two to three quarts may bring away considerable debris and so re-establish drainage that it suffices for a cure. Frequently, however, the decaying decidual masses are not removed, and the cervical canal is again occluded and repeated irrigation becomes necessary. This fact, and also the danger of carrying the infection into and through the tubes, and the danger of injuring the uterus with the douche tube, constitute the objections to irrigation.

A suitable curette properly used may be of great value in removing mechanically the contaminated decidual and placental debris. The proper construction of the instrument is determined by a consideration of its dangers. The chief objection to it is the danger that it may perforate or injure the uterus. To avoid this danger it should be of ring or loop shape, and the shank should be sufficiently flexible so that it will bend before it penetrates normally resisting living uterine tissue. One edge of the ring must be sharp enough to cut soft tissue. Such a curette in the hand of one who recognizes its dangers is fairly safe. The surface of the uterine cavity should be carefully gone over with this instrument while the irrigation washes away all debris removed. The application should be so thorough that it need not be repeated. So used, once for all, the curette has its place, and a valuable one, in the treatment of sapremia.

After curetting should the uterus be tamponed? I believe the common idea that a tampon is a drain to be incorrect. It is rather a plug which stops up the cervical canal. An intrauterine tampon stimulates the uterine contractions and its circulation. In this way it helps in the shedding of adherent pieces of decidua and placenta which come away with the tampon on its removal. These facts established by clinical observations determine the rule for the employment of a tampon. When a curettement can be done thoroughly, so that all debris is certainly removed, omit the tampon. When it is impossible to curette thoroughly or even at all on account of weakness of the patient or lack of anesthetics or for other reason, tampon the uterine cavity with sterile gauze, which should be removed in twelve hours.

In the local treatment of true puerperal infection we have to rely on the same measures, drainage, irrigation and curetting. The object of the curette is here, as in

sapremia, to remove intrauterine debris, which forms a good culture medium for the parasitic germs. A special danger pertains to its use in this case which should be considered. Nature combats the parasitic invasion by the establishment of an inflammation which is a preservative process. It consists essentially in the formation in front of the invading microbes of a wall of leucocytes whose function it is to destroy them and neutralize their poisons and thus expel them or limit their advance. This opposition of Nature will be successful unless the parasites are too numerous or too virulent or the resistance of Nature too feeble. In this latter case no local treatment can help. In the former there is the danger from the curette that the instrument will break through the leucocytic wall and give the microbes a free passage into the vessels and tissues of the formerly protected zone. Hence in a true infection the curette should be used with unusual care not to wound healthy uterine tissue.

In a true infection drainage and irrigation remove the parasitic products, as in the case of saprophytic disease. Some of the dangers of irrigation have been mentioned. Another danger in cases of puerperal infection is that of washing out thrombi from the veins and forcing the fluid into the circulation. For these reasons the usefulness of irrigation is limited.

This study of the conditions for the employment of these measures prepares the way for the practical rules to be observed in managing cases of puerperal fever as they arise. When the temperature of the puerpera rises above 100, whether this rise be accompanied by a chill or not, we first examine the vulva and introitus vaginae. If this region be inflamed and gray patches appear where tears had existed, local applications may be made as previously suggested.

If the vulva is normal we note the condition of the lochia. If it is offensive we diagnose a sapremia either alone or accompanied by an infection. If the lochia is scanty or absent when it has previously been free we consider the lack of uterine drainage to be an important factor in the causation of fever. In this case we seek to re-establish drainage perhaps by massage of the uterus or by changing its position or by securing free catharsis. This last measure is, as you all know, very often efficacious. Sometimes, no doubt, the fever is due to intoxication from bowel contents, and this, of course, is best treated by securing catharsis. In other cases, however, a uterine infection is favorably affected by catharsis, and probably by the effect of the intestinal movement in starting up uterine drainage.

When the fever continues in spite of a thorough trial of these measures for twelve to thirty-six hours, we will have to consider the advisability of intrauterine irrigation and curettement. If the lochia does not reappear in spite of our manipulations we have good reason to attribute the fever to lack of drainage and anticipate favorable results from irrigation. When we know that the afterbirth came away complete there is less indication for curetting. If we see the patient first after the fever has existed for some time and the probability is great that considerable intrauterine debris is present we waste no time, but proceed at once to clean out the uterus with the technic before suggested.

Whenever the uterus is invaded, either with the douche tube or the curette, it is very desirable to obtain a specimen of the uterine contents for microscopic examination and, if possible, for a culture growth. The presence or

absence of parasitic germs not only influences the prognosis but occasionally the treatment.

After the uterus has been once thoroughly cleaned, a continuance of the fever indicates an extension of the infection beyond the surface of the endometrium. Further efforts at local treatment are in vain. When the uterus and adnexa are tender the trouble may be localized or confined to their region. The appearance of peritonitis shows the extension of the infection through the uterine walls. In the not uncommon condition of absence of local tenderness, with symptoms of profound general intoxication, we have to do with bacteriemia.

Cases of pelvic and general peritonitis are best treated with hot moist dressings to the abdomen and measures to overcome distension and paralysis of the intestines. Local treatment of the uterus should be at once suspended. General septicemia or bacteriemia is also quite beyond the reach of any local treatment. Here we should institute tonic supporting treatment, with most careful attention to nutrition and protection from all waste of energy.

It is necessary to refer to two measures to combat sepsis that have been recommended for use in puerperal fever or that are more or less in vogue, viz., the anti-streptococcus serum of Marmorek and the silver preparations of Credé. It is only necessary to say, in regard to the former, that experience with it has been unsatisfactory. Reports from the Credé treatment of sepsis are much more encouraging. Both the unguentum Credé and the more recent collargol used hypodermically have proved of value and are not dangerous in their employment.

Finally, I must say a word about the subject so often discussed at present: hysterectomy for puerperal fever. I believe its field is exceedingly limited. It is indicated only when the infection is confined to the uterus and when Nature is incompetent to combat the infection. It is evident that the difficulties in diagnosing this condition are so great that they are practically insurmountable. Therefore, I believe this operation may be omitted from our list of measures to be employed in the management of puerperal fever. The surgical treatment, consisting in the evacuating of a puerperal abscess, whether located in the abdominal cavity, the pelvic connective tissue or elsewhere, is, of course, indicated whenever this condition is determined.

FLATFOOT IN INFANTS AND CHILDREN.

ROBERT W. LOVETT, M.D.

BOSTON.

The subject of flatfoot in children has received but little attention and the condition is often overlooked. The former opinion that all children were flatfooted at birth has been rendered untenable by the investigations of Dane, who demonstrated that a normal arch exists at birth, but that in well-nourished children a pad of fat is present in the sole of the foot which fills up the natural hollow of the foot and leads to the appearance of flatfoot. In thin children this pad does not exist and the imprint of the foot then resembles the adult type. Section of the bones shows that the arch of the foot exists from birth.

FLATFOOT IN INFANTS.

Heavy children who walk early, and especially if they have any grade of rickets present, are apt to show soon after beginning to walk a tendency to tread on the inner border of the foot, which is likely to attract attention.

The boots are run over to the inside and the leather of the upper is soon brought in contact with the ground, and the whole boot, being of soft and yielding leather, is twisted to the inside and its abnormal shape is noticeable. This, of course, makes the inner malleolus more prominent than it should be, and seen from in front the foot is markedly displaced outward in its relation to the leg. Children of this age rarely complain of pain, but they walk with the feet wide apart, with a somewhat unsteady gait; they are obviously clumsy and they trip easily and have many falls. On examination the foot is normally moveable in all directions and can be readily put back into the normal relation with the leg. There is no tendency toward fixation in the abnormal position as in flatfoot of the same grade in adults. The knees are generally lax and when fully extended permit marked lateral mobility. When the child stands, on account of this lateral mobility the tendency to flatfoot is exaggerated. The combination of lateral mobility in the knees with the tendency to walk with the legs apart it is easy to see tends to exaggerate the disposition to throw the weight onto the inner border of the foot. When seen standing without shoes or stockings such children present an appearance of marked flatfoot with a suggestion of knock-knee.

Such children are not necessarily feeble or debilitated, but often of the most robust and heavily-built type. The cause of the difficulty is obviously a disproportion between the weight to be borne and the muscular power, and even a slight grade of rickets seems to relax the muscles and ligaments to an extent which strongly predisposes to it.

The affection is invited by the bad shape of many children's shoes. Until lately they were all made the same for each foot, rather narrow in front, wide and roomy at the middle of the foot, with no support to the arch and little or no heel. Of late years shoes have been made better suited to the foot, but still far from perfect. These shoes have a straighter inner edge, with more room in front, and tend to hold the foot adducted rather than in a position of abduction. They are still deficient in having little or no support for the arch of the foot, and of being so yielding that they afford little assistance to the muscles.

To diminish in children with this trouble the support to the muscles by prescribing the use of moccasins or by ordering walking in the bare feet seems unphysiologic, because the weight comes on a foot still less supported to bear weight than if a fair boot is worn. The same is true in a measure of the use of low shoes and slippers when there is a tendency to flatfoot. A lacing about the ankle makes it easier for the muscles to exert their force, and a good boot will improve a flatfooted child's standing position as soon as it is put on and hold the foot in better position as long as it is on. The argument that the muscles should be left free to develop in the feet of such children is negated by the fact that the muscles in question are already stretched and overfatigued and require support rather than further freedom and increased demand on their energy.

In the treatment of these cases the mildest measure that will suffice to hold the foot in a correct relation to the leg is the best suited to the case. The muscles should be as little cramped as possible and rigid support is to be avoided if possible. In the mildest cases the use of a proper shaped boot may be enough to correct the trouble if the child has been wearing boots of the old pattern, but such boots are easily stretched out of shape,

and new boots correct much better than old ones. Making the inner edge of the sole and heel thicker than the outer edge by $\frac{1}{8}$ or $\frac{1}{4}$ of an inch will in some cases throw the weight more onto the outer border of the foot and correct the deformity, but this method is open to the objection of throwing the outer border of the foot strongly against the outer leather of the boot and often causes a corn on the little toe, the foot simply sliding down the incline onto the outer side of the boot.

The most generally useful method of correction in infants is by means of a graduated pad of leather or felt incorporated in a thin leather inner sole, which raises the arch of the foot and holds the foot on its outer border. It has the advantage of not making the sole of the boot rigid and allowing a proper use of the muscles on which the ultimate cure depends. This pad should reach at the inner border of the foot from just behind the ball of the great toe to a point in front of the heel. It should extend the whole width of the foot. At its edges it should rise gently to its greatest height along the middle section of the inner border.

In the severer cases a flatfoot plate of metal or celluloid is required; celluloid is preferable as being lighter and less rigid and generally is sufficiently resistant to last a reasonable time.

In the severest cases of all some outward pull on the inner malleolus is required, and in these cases a steel sole plate jointed at the ankle to an upright running up the outer side of the leg to the upper part of the calf is necessary. From this upright a circular leather strap runs around the inner malleolus to pull it outward. Fortunately, this apparatus is seldom required.

The length of time that treatment will be required varies. In the milder cases the use of a pad for a few months will often effect a cure. In the severer cases it is likely that some form of support will be required for several years.

Massage to the muscles of the calf and sole is of much benefit in the treatment.

FLATFOOT IN CHILDREN.

In older children the treatment does not differ essentially from that of adults, inasmuch as plates are generally necessary as a means of support rather than the soft pads described for infants. In children, however, rigid flatfoot is rare, and the lax and yielding foot is the rule, which requires accurate and definite support.

Pain is rarely complained of by children in flatfoot or pronated foot, and the commonest symptoms are prominence of the inner ankle, bending over of the boots or uneven wearing of the heels. Knocking one ankle against the other is often found. Corns and callosities are rare.

In children from 5 to 15 the occurrence of lax pronated foot should lead to an inspection of the back, as scoliosis very frequently coexists as a result of the same muscular laxity that causes the deformity of the foot.

Two matters in treatment are essential: The foot should be supported in the correct position and the child should be trained in the use of the muscles supporting the arch and should be drilled in correct standing.

For the support a light steel plate is most often useful, although celluloid is more serviceable in children than in adults. This plate is most often to be made with an outside as well as an inside flange to keep the foot from slipping off, and the plate must be seen every four months if it is to be kept efficient as the child grows.

The prognosis in both infants and children is in general excellent as to complete recovery, but exercises must form a part of the treatment to bring about this result.

THE PRESENT POSITION OF GALLSTONE SURGERY.*

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TROY, N. Y.

Over a quarter of a century has passed since Marion Sims did the first planned operation for gallstones, and sufficient time has now elapsed to permit a fairly correct judgment as to the present position of gallstone surgery. But before gallstone surgery will show its best results the profession as a whole must recognize that there are no solvents which will dissolve gallstones in the gall bladder and bile ducts, and must, furthermore, recognize their own culpability if operative interference is delayed until the vital powers are exhausted. No field of surgery gives greater relief from agonizing pain, or gives greater capacity to do one's normal work than judicious early operations for gallstone disease. Not for an instant would I be understood as advocating operation in every case of pronounced gallstone colic. But when the attacks recur frequently, show a tendency to increase in severity, and become more and more incapacitating, then an operation is imperative and should be done before the recuperative powers are greatly impaired.

THE FALLACY OF INTERNAL MEDICATION.

In the advance which gallstone surgery has made in the past 26 years, the surgeons have been obliged to lay several popular and professional errors. The first in magnitude and, unfortunately, still prevalent among the profession is that stones can be dissolved by internal medication—a heretical doctrine which yearly claims its hecatombs of misguided victims. It is the more deplorable because any one with an extensive experience knows that long periods of time sometime elapse between attacks. I know of one case of over 19 years' interval and another in which six weeks before his fatal attack a brother physician boasted to me that he had dissolved, by daily doses of soda, the gallstones from which he had formerly suffered, and for nine years had been absolutely well. Within six weeks of that day he died from perforation of the gall bladder, and 153 stones were found therein.

THE REAL CAUSE OF THE COLIC.

Right here it is well to recall the present teaching that it is the associated inflammation which occasions the pain and cramp and not the mere presence of the stones. This seems a rational explanation of the quiescence of stones found at autopsy in so many persons who never have suffered from gallstone colic or other condition commonly associated with gallstone disease. It furthermore explains the fact of putty-colored stools often preceding for a day or two the appearance of gallstone colic. This last fact I, with apprehension, noticed many times in my own case. The profession is and has been slow to learn that pronounced jaundice is not a common symptom of gallstone disease. On this Lawson Tait laid great emphasis, and also that when jaundice was very deep and persistent it pointed rather to a malignant complication. This experience of Tait has been borne out by that of Mayo Robson

* Read at the meeting of the New York State Medical Association, New York City, Oct. 21, 1902.

and Kehr. Kehr declares that jaundice is absent in 80 per cent. of gallstone cases. Even when large stones are in the common duct, the jaundice is never so deep and persistent as in malignant diseases. Another important diagnostic factor is that in case of stone in the common duct the gall bladder is usually contracted and often a mere rudiment, whereas a very largely distended gall bladder, accompanied by jaundice, is almost invariably due to malignant obstruction. Courvoisier, who first statistically demonstrated this fact, claims that the repeated attacks of inflammation necessary to extrude a stone of any size from the gall bladder into the common duct, lead to thickening and contraction of the walls of the gall bladder.

OPERATIVE RELIEF.

Now, if gallstone disease is a surgical affection, what are the operative procedures which offer the best chances of cure? Lawson Tait commonly did a simple cholecystotomy, incising the gall bladder, evacuating the stones and then stitching the gall bladder to peritoneum and aponeurosis with temporary drainage by rubber tube. This operation in the hands of Tait, Mayo Robson and Kehr has proved curative in the vast majority of cases with a mortality of less than 2 per cent. Tait was accustomed to crush stones in the cystic and common ducts by fingers or padded forceps, and Thornton commended breaking up common duct stones by passing needles through the ducts into the stones. When Courvoisier and Marcy deliberately excised stones from the common duct a new era dawned on gallstone surgery, for it not only showed that stones could be safely excised from any portion of the common duct, but that in cases of severe infection the common and hepatic ducts could be drained for weeks to the relief of patients previously at death's door.

REMOVAL OF THE GALL BLADDER.

With the improvement in technic in common duct cases the removal of the gall bladder has steadily gained in favor. The removal of the gall bladder commonly removes the laboratory in which the stones are formed and does away with the fixation of the gall bladder in an abnormal position, to the increased chances of adhesions and to kinking of the common duct. While commonly no great inconveniences may result from the suture of the gall bladder to the parietes, occasionally the traction on the adherent gall bladder may be very painful. For years after Tait operated on me I was able to row, box and fence without a particle of inconvenience, but an attack of pneumonia last February, with the coughing attending it, made me feel like cursing the fact that my gall bladder was so firmly attached to the parietes. With our increased knowledge of common duct stones and the methods of dealing with them, we need no longer be deterred from excising the gall bladder if the stones are found only in it and the common duct seems free. Kehr, from his enormous experience, believes excision of the gall bladder or cholecystectomy to be the method of choice, and his cholecystectomies have given only a mortality of 3.3 per cent.

DRAINAGE.

Kehr has added another valuable procedure to our means of relief—the drainage of the common and hepatic ducts, which he frequently executes after removal of stones, or even when no stones are present, if there is evidence of infection of the bile ducts. In this way he has succeeded in saving many cases which otherwise would have been hopeless. The same thing may be done at times with less danger even though with diminished

certainty of drainage by cholecystostomy. Only recently I had from the operator an account of the case of a very prominent politician who some months after an apparent recovery from typhoid, developed a grave cholangitis accompanied by intense jaundice and high fever. The condition of the patient was so very grave that the gall bladder was simply incised and stitched into the wound. Typhoid bacilli were found in the bile evacuated at the operation, but no stones. Now, a year after operation, bacilli are still found in the bile from the fistula, which is not allowed to close, any attempt at closure being followed by a recrudescence of the old symptoms. In a similar case it would be better if the condition of the patient admitted to open the common duct, stitch in a large rubber tube passed well up to the hepatic ducts, and after tamponing for a few days the belly as a safeguard, irrigate the bile ducts with repeated irrigations of warm normal salt solution. Kehr, in his admirable clinical histories, repeatedly mentions removing in this way most offensive bile, with the result invariably of a marked diminution of sepsis. The neglected cases of gallstone disease by reason of their complications, such as innumerable adhesions, fistulous communications with other organs, obstruction of the pylorus and duodenum by kinking, will demand the most resourceful and skilful surgery, and will even then have a high mortality. In addition with long-continued gallstone disease cancer is not infrequently associated, and then all efforts of relief are futile. However, we can, in the present state of gallstone surgery, promise in uncomplicated cases almost certain cure; in cases of stones in the common duct, unless in persons with other complications, but a slightly increased mortality. While the neglected cases, the cases in which patients and attendants have procrastinated and frittered away time and recuperative powers, the mortality will be high; how high one can not say, but in Kehr's cases this class gave a mortality of 47 per cent.

It therefore becomes our duty when face to face with recurring severe gallstone attacks which threaten to incapacitate or kill the patient, to urge early operation and let the patient bear the onus of the delay, if there is any.

REMARKS ON THE CASES OF THE AUTHOR.

Of 44 gall bladder operations which I have done 6 have proved fatal, as follows: Of 34 uncomplicated cholecystostomies, one died.

CASE 1.—A young woman, aged 30, weighing about 240 pounds, died on the third day when the heart gave out. Only a partial autopsy was allowed, and no peritonitis or hemorrhage was found.

Two complicated cholecystostomies died. They were as follows:

CASE 2.—A woman of 55, a sufferer for 15 years, had vomited almost continuously for three weeks before operation. The stomach was very much enlarged, and I intended to do a gastroenterostomy, but after breaking up adhesions of the gall bladder to the transverse colon, stomach and duodenum and removing 35 stones, the patient was so feeble that I had not the courage of my opinion and the patient died 14 days later, having repeatedly vomited retained food and occasionally blood, gradually becoming weaker. No autopsy allowed.

CASE 3.—The second case was a woman, 54 years of age, who had been ill five weeks before I first saw her, at which time she was deep gold color, septic and constantly vomiting. I could feel an enlarged gall bladder, which was very tender and contained stones which actually grated under my touch. Operation was urged and declined for three weeks. When I then did it I removed 115 gallstones weighing exactly 2 troy ounces. The patient's fever disappeared, the stools contained bile, and appetite was reestablished, when she suddenly col-

lapsed on the fifth day and died. A partial autopsy showed no hemorrhage nor peritonitis.

In 8 cases I have met with stones in the common duct, in 5 stones were also found in the gall bladder. In 3 of these cases I opened the gall bladder, removing the stones by a cholecystostomy and crushing stones in the common duct by fingers or padded forceps—all three recovered. In 2 cases I opened the common duct only; first finding from exploration through the common duct a rudimentary or contracted gall bladder and after draining the common duct with rubber drainage—both cases recovered.

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CASE 5.—The second death was in a feeble Armenian, 39 years of age, who had suffered fifteen years and had been deep bronze color for months. I removed from him also one stone from the gall bladder and one from the retroduodenal portion of the common duct. During the month he lived after operation his temperature remained normal or slightly below, and on the thirtieth day he suddenly died from heart collapse, due as much to innutrition as anything. The autopsy showed no peritonitis nor hemorrhage, but great wasting of all tissues.

Of 2 cholecystectomies which I have done on patients who had suffered from gallstones one died.

CASE 6.—The patient was a man 55 years of age, whom I saw in consultation eight years ago, at which time I urged him to have an operation. At that time the attacks of pain were of great severity and recurred very frequently, but he would not entertain the thought of operation. During the eight years which elapsed he was frequently incapacitated by pain and jaundice from labor, and increasing doses of morphin became necessary to give him any comfort. Just before operation he had required one-half grain doses of morphin every three or four hours. I urged operation, and removed a gall bladder, pear-shaped, and about six inches long. The gall bladder contained no stones, but its walls were very much thickened and the mucous membrane very much thickened, inflamed and in some places necrotic. No stone could be detected in the common duct. The cystic duct was ligatured and overcast and the abdomen tamponed. His vessels were sclerosed. During the ten days he lived he had, with increasing frequency, attacks of lividity of hands and weak pulse, but practically a normal or slightly subnormal temperature. The stools, previously white, became normal after operation and he had absolutely no pain. His appetite was fickle and death came with a collapse. No autopsy was allowed.

BROMID OF ETHYL IN ADENOTOMY AND TONSILLOTOMY.*

A. R. SOLENBERGER, M.D.

COLORADO SPRINGS, COLO.

GENERAL STATEMENTS.

I wish to preface this study on bromid of ethyl with a few statements, which, though they apply to the use of any one of the general anesthetics in adenotomy and tonsillotomy, yet they more naturally formulate and have particular application in the use of bromid of ethyl in the operations we wish to consider. They will not only serve the operator as guiding principles, but will foreshadow the general limitations of ethyl bromid in operations on adenoids and diseased tonsils.

* Read before the El Paso County Medical Society, Colorado Springs.

1. If an indication is found for the removal of tonsillar or adenoid tissue, a minute differential diagnosis of the pathologic condition is absolutely imperative. Otherwise there can be no scientific remedial disposal made of it. There will be selected an improper method of operation, either in the choice of the most suitable anesthetic or of the instruments best adapted. Not only must the eye make an exact measurement of the diameters of the tonsil in its largest dimensions, but it must determine the degree in which the tonsil is sessile or pedunculated, adherent to or free from the faucial pillars, soft, with a tough fibroid frame work or hard fibroid throughout, and whether the peritonsillar areas, including the accessory glands, contain any products of old inflammations.

Of the products of the pharyngeal vault, the mind must not only be ready for an impression of a possible enlarged third tonsil, but for the probability of scattered adenoid crypts, extending around and into the eustachian orifices and down the posterior pharyngeal wall, and even into the posterior nares. Then, and only then, can the operator select the proper anesthetic and the proper instruments.

2. When the indication for operation has been found, the operation should meet completely the indication, that is, it should be done thoroughly.

3. The pain, excitement and shock incident to tonsillotomy and adenotomy make general anesthesia necessary in the large majority of children, and very desirable in all.

4. Even in the former class, that is, in phlegmatic or robust children, local anesthesia does not entirely relieve pain nor insure against undue shock and subsequent prostration.

5. I wish this present study to apply to children only between the ages of 1 and 12; since before the age of one and after the twelfth year, local anesthesia usually suffices.

AN IDEAL ANESTHETIC DEFINED.

From these prefatory statements, I think it will naturally follow that the thoroughly scientific operator will choose between one of the several anesthetics, just as he will select from the many kinds of instruments those which are most suitable to the particular kinds of pathologic tonsillar or adenoid conditions in hand, as well as to adapt the anesthesia and instruments to the age and temperament of the patient.

The properties of an ideal anesthetic should possess:

1. The element of perfect safety.
2. The element of endurance; should benumb long enough to admit of a thorough operation.
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4. Should be pleasurable, non-excitant, a muscular relaxant and respiratory sedative. The latter element should not be so complete as to abolish entirely the respiratory reflexes.
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BROMID OF ETHYL IN THE LITERATURE.

Such an ideal anesthetic has not yet been found, but in bromid of ethyl we have, perhaps, one that satisfies these demands more nearly than any other in operations on a certain class of cases of adenoids and diseased tonsils of children.

The use of bromid of ethyl, while it meets these demands perfectly only in properly selected cases, must therefore have definite limitations.

It will be the object of this paper to point out these

limitations and endeavor to establish its legitimate place among the general anesthetics.

The safety of an anesthetic is no doubt always of the first importance. Everything else should be sacrificed for this. Ether is, of course, generally understood to have the best statistic record for safety. Yet mortality reports for bromid of ethyl seem to have in recent years been as favorable as for ether.

Gurlt¹ (1892) finds one death in 4,550 cases against one death for A.C.E. in 4,118 cases. Later (1894) the same author reports one death in 3,662 cases. Chisholm² (1895) used it in 3,000 cases without a death. Gilles³ (1896) collected 20,000 cases of its administration without a fatality. Hoddes⁴ (1899) reports 40,000 cases, in most of which there was no previous examination of the patient and in some enormous doses were given, yet not a single death occurred. Reich⁵ (1900) in a most comprehensive survey of the literature found 16 deaths in 60,000 cases. In some of these he found the deaths were due to some of the mistakes of administration, which will be referred to later in this paper.

Theime⁶ and Hoffmann⁷ each reports cases of death in which toxic symptoms began 24 hours after administration when the autopsy showed parenchymatous degeneration of the heart.

However, in nearly all of the fatal cases from the full record it will be seen that the autopsy revealed pathologic conditions which were present before the anesthetic was administered, either in heart, kidneys or liver. Again, all of these fatal cases were above the age of 20 years.

In all the literature at my command I have not been able to find a death in a child. My own experience with its use covers a period of five years, having administered it in 50 cases in the clinics of the laryngologic department of the Northwestern University, and in about the same number of cases in private practice. I have seen only two cases in which the symptoms were at all alarming, and in one of these I could attribute them to faulty administration and the other to the impurity of the drug.

On surveying the earlier literature it will be found that some fatalities are recorded, but that the number decreases as the proper methods of its administration were learned and proper limitations to its use were made, until in recent years there seem to have been a few deaths as there also have been with ether and chloroform.

PRECAUTIONS TO BE OBSERVED.

I have thus come to believe that bromid of ethyl is a perfectly safe anesthetic when given to a healthy child and under certain precautions. To insure the maximum of safety:

1. There should be a reasonable certainty of the healthiness of the lungs, liver and kidneys. The fact that the child is delicate does not contraindicate its use. Such a child needs simply a smaller dose and will come under anesthesia quicker. The stomach must be empty and the chest unrestricted by the clothing or the arm of the assistant. The precautions necessary to eliminate all danger are based on the known characteristics and physiologic action of the drug; therefore,

2. The drug should be pure. The mistake of using bromid of ethylene should be avoided. This mistake has unfortunately been made. The free bromin which the ethylene specimen contains was responsible for the death of Labardio's⁸ case, in which death was due to syncope occasioned from reflex nasal and bronchial irritation of the bromin. The pure specimen is only to be

found in seal-brown glass tubes, which were sealed instantly, perfectly volatile, sweet (not garlicky), colorless and non-residuous. I always make it a practice to test the specimen even from these tubes by pouring the proper quantity in a graduate and a little of it on the hand before its administration.

3. It should be given *en masse*. This is imperative, as will be seen from a study of its physiologic action, for it acts directly on the nerve centers, not as an irritant like chloroform, but paralyzes these centers almost immediately. Hence there is no stage of excitement and no initial laryngeal reflex, and little or no muscular rigidity. The brain paralysis is at once followed by dilatation of the cerebral vessels, producing congestion of the brain for a certain period before the heart can be affected. This explains why the sitting posture, so frequently desirable in these operations, is not only perfectly admissible, but an element of safety.

But if now the anesthesia is pushed beyond this brain congestion limit or the brain condition in which the sensitive reflexes are abolished, quite another state is induced which becomes dangerous. This more prolonged cerebral paralysis favors the formation of chemical toxic compounds with the protoplasm of the cortex and other centers, which may prove rapidly fatal, especially when there is organic disease present.⁹

Then, as its safety and success depends on the power of the anesthetic to produce prompt and uninterrupted, but limited paralysis, the cone containing the drug should exclude all air and be kept in position till cerebral paralysis and relaxation is complete, and under no circumstances should the cone be reapplied. If air is at all admitted, excitement and rigor result, and if re-applied it is apt to act as an irritant to the brain instead of a sedative, and finally result in dangerous paralysis of the respiratory centers.

4. Time required for anesthesia: No hard and fast rules can be given as to the length of time the cone should be held in place, nor the exact quantity poured into the cone. Both will depend on the temperament of the patient or nerve tone. I have found 5 gm. sufficient for children under 5 years, and 10 gm. the maximum dose up to the age of 12 years, and the time of administration from 20 seconds to 40 seconds. At least operations can always begin one minute after the beginning of administration.

I prefer to give it myself, keeping hold of the disengaged arm with finger on pulse, watching respiration and tone of the arm and neck muscles, but more especially of the eyes, which remain open, for dilatation of the pupils and suffusion of the conjunctivæ. If then the proper moment is chosen for commencement of operation the operator can count on about two minutes for work, after which the patient becomes almost immediately conscious and is able to walk and has no uncomfortable sensations.

RULES FOR USE.

In tracing the causes of the fatal cases recorded, we then have formulated in a negative way the rules for its administration:

1. Do not use bromid of ethylene.
2. Do not use an old or impure solution.
3. Do not administer it in repeated and small quantities. Give *en masse*, admit no air.
4. Do not continue its administration longer than one minute.

The utility of such an ephemeral anesthetic, aside

lapsed on the fifth day and died. A partial autopsy showed no hemorrhage nor peritonitis.

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its use to the fairly free pedunculated cases; in these one can shave through the pedicle beyond the crypts.

SUMMARY.

To epitomize: For the brief anesthesia of bromid of ethyl all of the forked guillotines and the old patterns of McKenzie are too slow and too clumsy, and those which are intended for the associate use of the vulsellum and the cold snare, while they are the most scientific under chloroform or ether, are not practical under bromid of ethyl.

To make bromid of ethyl thoroughly effective it must be limited to certain carefully selected cases and the use of a guillotine whose fenestrum can be opened with one hand, and the blade and fenestrum ring as thin as adequate strength will permit, and to allow of a hand grasp at once comfortable and so firm that the tonsil can be crowded into the fenestrum to its fullest extent with a precision and quickness commensurate with the ephemeral nature of the anesthetic. To insure this thorough work it will be readily seen that the fenestrum ring must exactly fit the tonsil; hence at least three children's sizes of this tonsillotome are necessary.

The child is wrapped in a stout sheet, firmly pinned, with one arm free and held by the assistant in the intubation position, the gag is then placed and the cone immediately applied. When the anesthesia is complete, as indicated by the above-mentioned signs, and the first 45 seconds have been consumed in excising the tonsils, at least one minute of unconsciousness is left to clear the vault.

For the removal of the adenoids I have found Dr. Casselberry's guillotine as modified by Dr. Gradle quite satisfactory when the growth is simply the enlarged third tonsil centrally located in the vault. When, however, the adenoids extend slightly beyond this area I use the Delstaunch modification of the Gottstein curette, making a central sweep, securing the greater part of the mass in its teeth, then follow with the Kirstein curette. With the latter one can lift up the soft palate to secure a large view of the vault and shave more safely and close to the eustachian orifices. The head of the patient is then quickly brought forward while there is usually still time to enter the vault with the finger to remove any possible remnants.

Finally, as to the technic this method demands: While it is true that it requires great dexterity and accuracy, yet if this is once acquired it seems to me it is more simple than any other method.

Certainly the operator who can do well this double operation with bromid of ethyl would extend the beneficence of these operations to a much greater number of sufferers, for many of the profession and laity who know the baneful consequences of mouth breathing shrink from the remedy, because of the formidableness and great expense of other methods.

But suppose the operator has not this dexterity or the pathologic structures are not suited to the use of ethyl bromid, or this particular structure of instrument is not at hand, then either the tonsillotomy and adenotomy may still be done at two different sittings with bromid of ethyl, since this anesthetic causes so little inconvenience; so I would still speak for bromid of ethyl, but not necessarily for this particular instrument. On the other hand, if the tonsils are sessile or submerged, and require drawing out with the vulsellum, and therefore another anesthetic which will insure longer time, this instrument will still prove more accurate than any with a self-acting fork like the Mathieu's, for the operator

can perfectly control and measure with the vulsellum, in the presence of the firm and steady grasp which this instrument gives to the operator, the exact quantity of tonsillar tissue to be removed.

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RUPTURE OF GALL BLADDER OR DUCT FROM VOMITING.

WITH RUPTURE OF APPENDIX IN SAME PATIENT; TWO CASES OF APPENDICITIS; ACUTE YELLOW ATROPHY OF THE LIVER.*

W. W. GRANT, M.D.
DENVER.

RUPTURE OF GALL BLADDER OR DUCT.

CASE 1.—A. C. D., aged 53. Four years ago, I am informed, he had two attacks of colic. Aug. 1, 1902, had an attack that resembled biliary colic. In each instance recovered promptly, with no evidence of gallstone in the intervals.

On September 1 last I was called at 2 a. m. to see this patient, who was suffering severely from colic, with greatest pain over gall bladder. He was given a hypodermic of morphia and atropia, hot applications to abdomen. He became easier and I returned home. Two hours later I was again called. He had been vomiting and his pain was now excruciating, and there was marked rigidity of abdominal muscles, with decided localization of pain under the right costal arch. I believed perforation of gall bladder or duct was imminent or had occurred. I returned at 8 o'clock, when his temperature was $102\frac{1}{2}$; rigidity of muscles increased, with increasing tenderness over right epigastrium to vicinity of appendix. I advised immediate operation, but called Dr. Leonard Freeman in consultation. He thought there was evidence of gall bladder disease, but that the appendix was the main source of trouble, and also urged immediate operation, but I could not get the patient on the operating table before 3 p. m., when patient's temperature was $103\frac{1}{2}$. Appendix was first removed. It contained no pus, but was cystic and ruptured at apex. Bile flowed freely from this wound as soon as peritoneum was opened, which demonstrated what I suspected. An incision was made immediately over gall bladder and bile escaped freely in larger quantity, with some thick grumous bile-stained material. Several gallons of warm salt solution were used in the abdomen through both wounds before the water escaped free from bile. The abdominal wall was fat and very thick. The gall bladder was collapsed completely and could not be brought into the wound nor into good view. No stone could be felt in the ducts. The patient had a weak (probably fatty) heart, and his condition was so bad under anesthesia that death seemed imminent; so the operation could not be prolonged, though he was on the table little less than an hour. The exact location of the rupture was, therefore, not determined. Dr. Freeman held the fundus of the bladder with forceps while I packed gauze well around it. His extreme condition necessitated great haste and an unsatisfactory conclusion of the operation. In fact, we were greatly relieved that he did not die on the table. He reacted fairly well. His temperature declined to 99 for two days and then fluctuated between $99\frac{1}{2}$ and $101\frac{1}{2}$ for two days more, when he died from septic peritonitis. His heart remained weak, and nausea vomiting prevented any nourishment by stomach. I regret very much that

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I did not have the privilege of a postmortem to complete this report.

The fact that the pain was greatly increased immediately after the severe spell of retching (due partly to drinking warm water), with increased local tenderness, rigidity of abdominal muscles, increased frequency of heart action and fever, strongly indicates that the vomiting was the cause of the rupture.

If Courvoisier's law be correct, that obstruction of the common duct by a stone does not, as a rule, produce distension of the gall bladder, but that obstruction from other causes does, then this case must, in all probability, be regarded as an exception; for the large quantity of escaped bile observed shows there was marked distension. The history of the case, with which I have been quite familiar for several years, has never indicated malignant disease of the parts nor complete obstruction from stone or other cause for any great length of time. The attacks of colic certainly indicated stone, but, as is well known, it may not have caused complete obstruction, unless of a very recent date. There was never decided icterus, but at times slight digestive troubles, with staining of the conjunctiva.

Obstruction of the cystic duct alone would have shown, of course, simply a clear secretion of the gall bladder. Acute cholecystitis does not usually produce jaundice, but does cause distension of the bladder. A stone in the common duct might by ball-valve action, as shown by Fenger, permit intermittent evacuation of the bladder, and this was probably an instance. There were no symptoms of an inflammatory or ulcerative condition preceding the illness.

The recent interesting experiments of Erhardt on animals in dividing the common and hepatic ducts and permitting the bile to discharge freely into the peritoneal cavity show conclusively that healthy, sterile bile will not produce peritonitis, and that bile infected with the colon bacillus does. In the former case the animals finally died of cholemia; in the latter from septic peritonitis. These conclusions are sustained by clinical experience in the reports of cases of traumatic rupture of gall bladder and hepatic and common ducts in man.

Many individuals live for years or a life time with bladder stones without pain or indication of their existence. But when their presence is indicated by attacks of colic or jaundice, no time should be lost in operating, as early operation is more favorable to recovery.

APPENDICITIS.

I report briefly two recent cases of appendicitis because of the interest connected with drainage and phagocytosis.

CASE 2.—W. Y., aged 37, affected with general abdominal pain at 3 a. m., Aug. 14, 1902. I saw him at 7 p. m. of same day. Pains very acute; abdomen not distended and all muscles hard and rigid. Sent to hospital and I operated at 9, eighteen hours from beginning of sickness. As soon as peritoneum was opened, half a pint of sero-purulent fluid escaped. Appendix was strictured by band near cecum and ruptured at apex. It was removed and stump pouched. With long forceps I pushed sterile gauze to the vesico-rectal cul-de-sac and as much more sero-purulent liquid escaped from the wound, none of it offensive. The cul-de-sac and region of the stump were cleaned with dilute peroxid of hydrogen, followed by salt solution—lymph being wiped from coils of the ileum with gauze. A strip of iodoform gauze was applied to the most dependent part of the pelvic cavity and another from the stump, and the small wound closed around the gauze strips.

The gauze was removed at the end of 36 hours. There was not a drop of pus anywhere. Two stitches were now inserted and the wound closed perfectly. From the hour of the opera-

tion his recovery was rapid and uneventful, without a single untoward feature, and not a dose of medicine was given. The post-operative history would indicate that drainage was not necessary.

CASE 3.—O. H., Quester, N. M., aged 22, taken with appendicitis Nov. 11, 1902, brought to Denver by his physician, Dr. R. R. Green, and placed in my charge. Patient much better on arrival. Pulse and temperature normal, no tympanitis, tenderness over appendix, but no tumor perceptible on palpation. I have not infrequently found that when an appendicitis patient is manifestly better on the third or fourth day that it was good policy to defer the operation a short time. This was done in this case. His bowels were evacuated with enemas and no food given by the stomach for three or four days. He had vomited considerably in the first two or three days of sickness. He was fed lightly by rectal enemas of peptonized food.

I operated on the 17th of November, when there was not a single symptom of appendicitis except a slight tenderness on deep pressure, yet the appendix enveloped in omentum contained a small quantity of pus and was gangrenous, the gangrene involving a spot of the cecum at base of appendix as large as the little finger nail. The stump was pouched by a double purse-string suture, the first perfectly inverting the gangrenous spot of cecum. The omentum removed with the appendix and abdomen closed without drainage. Examined wound on the fifth day, though pulse and temperature were normal, and finding evidence of pus, opened skin wound when fecal matter was freely discharged, I infer, from sloughing of the small spot of gangrene. Fecal discharge ceased in two or three days, wound soon healed, and patient returned home in three weeks.

This was a fortunate termination and not devoid of a useful suggestion. Drainage from the stump, though it was perfectly inclosed, would have been a safeguard. But it would be better surgery, in a similar case, to remove all gangrenous tissue by excision, even though it involved the entire thickness of the intestinal wall, closing the gut in the usual way. Drainage would not then be indicated.

When in doubt, in a dirty case, with perforation and extravasation, as to whether the abdomen is perfectly cleaned, is it wise to dispense with drainage? Some surgeons, under the teaching of Metschnikoff, now insist that drainage material is more damaging to peritoneal resistance than a little pus, which can safely be entrusted to the battle of the leucocytes. I am not satisfied with the soundness and wisdom of this teaching, though the purpose and action of leucocytosis is admitted. There is always interest in the warfare of pathogenic bacteria when invading the territory of the phagocytes. A wise general will always attack the enemy's base of supplies, knowing that if he succeeds the army will be starved or whipped to death. The wise surgeon will always cut off the march of bacteria by destroying their source of supplies, the focus of infection, and the phagocytes will do the balance. This is Nature's weapon of defense. If drainage forces an outlet to offensive bacteria in accordance with well-defined surgical principles, it must still be used in appropriate cases. If the material used should impair the power of the phagocytes, though in a relatively less degree, it would be no argument against drainage in certain abdominal operations. I do not think it has been shown that the evil is equal to the benefits. I am satisfied that I have saved some patients after peritoneal extravasation by the liberal use even of gauze for drainage. In abdominal operations drainage imperils the integrity of the abdominal wall, therefore predisposes to hernia. It should consequently be dispensed with as soon as possible. But in the enthusiasm for new

theories and facts, in a justifiable belief in the efficacy of hyperleucocytosis, it is not wise to hastily discard surgical procedures which have stood the test of abundant experience.

ACUTE YELLOW ATROPHY OF LIVER.

The following case of acute yellow atrophy of the liver I report in the hope of promoting interest in a disease so very rare that Osler, in a recent work, declares that in a "varied and extensive postmortem and clinical experience no instance has fallen under my observation"; and so fatal that in a recent bibliography of the subject it is stated that reported recoveries were more probably mistaken diagnoses. It occurs usually between 20 and 30 years of age.

CASE 4.—K. M., aged 20. Married 18 months previous to confinement, which occurred in September, 1902, two weeks sooner than expected. Membranes ruptured 36 hours before; presentation and labor were normal. Infant well formed and healthy, weighing seven and one-half pounds; appetite, pulse, temperature, in fact, all conditions local and general seemed perfectly normal until the third day, when appetite disappeared, stomach irritable, with nausea and vomiting on taking food; and in the evening of the day slight momentary wandering, delirium was reported by the nurse; temperature 99 and heart action slightly increased in frequency, though at all times it was slightly weaker than usual. There was no evidence whatever of peritonitis or inflammatory trouble in pelvis or elsewhere. There had been no history of liver disease at any time, nor any evidence of it at the present hour. The next morning at 9 o'clock general icterus was manifest, the patient decidedly weaker, objecting strenuously to being disturbed for any purpose whatever, complained only of being tired, disposed to sleep, with growing stupor or coma. While the nature of the disease was now suspected, the lochia being quite offensive and temperature 99½, it was deemed a prudent measure to irrigate the uterus. This was done in a few hours, but did not affect the steadily increasing coma, and the patient died at 9:30 p. m., the fourth day after confinement.

In consultation with Drs. W. A. Jayne and E. A. Scherrer during the day it was the consensus of opinion that malignant jaundice existed. Postmortem 16 hours after death. Every tissue and organ was stained a deep lemon color; the liver atrophied, weighing two and a half pounds; and the heart soft and fatty and walls thin. Kidneys and spleen practically of normal size and consistency; gall bladder very small, containing hardly a teaspoonful of liquid; the large ducts unobstructed.

Following is the report of the pathologist, Dr. W. C. Mitchell:

"The heart muscle, kidney and portion of liver which were received from you on Sept. 15, 1902, were carefully examined and I have the following to report:

"Heart: Portions of the heart muscle teased out, stained with osmic acid and examined in salt solution showed distinct fatty degeneration of the muscles.

"Liver: The liver cells showed all stages of degeneration from granular cloudiness to complete fatty degeneration.

"Kidneys: No change observable other than the intense yellow staining of the sections as observed in salt solution preparations.

"The heart and liver findings correspond exactly with those found in acute yellow atrophy of the liver."

The real cause of this disease is not known. I can vouch for the natural, healthy childhood of this patient. She never before had a serious illness. Her brief married life was one largely of travel, ease and luxury. Her form was slight and delicate, and her appearance indicated anemia. Her pregnancy was not attended with albuminuria, stomach disorders nor any known diseased condition whatever.

It is a fact that of the two or three hundred reported cases, 60 or 70 per cent. occurred in women, 50 per cent. pregnant, usually resulting in premature labor and the

death of the child as well as the mother. The child in this instance is living and healthy. There is no specific history in this case. In the September issue of *Progressive Medicine*, page 211, the statement is made that in 42 cases reported the disease occurred during treatment for secondary syphilis and was due to the specific infection. With our present knowledge the value or truth of this statement may be questioned. The size of the liver is no indication as to the duration of the disease, though it is the chief organ involved.

Whether the condition is primarily a general infectious disease of a rare and unusual nature, or primarily a local infectious disease of the liver is not known. The suggestion of an intestinal origin has no distinct foundation. The resemblance to phosphorous poisoning is striking, though differing in important particulars; and while the urine of both may contain leucin and tyrocin, they are more constant in the former disease. Evidently the disease is rapidly diffused through the circulation, and future investigations will probably disclose a bacterial origin and nature.

ACCESSORY PANCREAS.*

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Anomalies in the development of the pancreas are rather rare occurrences, but when met they may be of practical importance to the clinician.

TYPES OF PANCREATIC ANOMALIES.

Pancreatic anomalies are divided usually into five types:

1. One of the commonest types embraces the abnormalities of the excretory duct, of which Sappey¹ describes the following five varieties: (a) The accessory duct of Santorini may be entirely absent. (b) The duct of Santorini sometimes is the main excretory duct and the duct of Wirsung the smaller accessory duct. (c) The duct of Wirsung occasionally does not pass through the ampulla of Vater, in common with the ductus choledochus, but empties into the duodenum independently. (d) Very rarely there are two excretory ducts of about equal size. They run parallel to each other through the entire length of the gland and, at the level where the accessory duct usually joins the duct of Wirsung, they are connected by an anastomosing branch. (e) One case has been described in which there were three excretory ducts.

2. The rarest and perhaps the most important type is the "pancreas annulare," first described by Ecker² in 1862. In this case the descending portion of the duodenum was encircled by a band of pancreatic tissue which was continuous, on either side of the intestine, with the head of the gland. The annular portion had an excretory duct, which, taking its origin in front and running from before backwards, emptied into the duct of Wirsung. Similar cases have since been reported by Auberg,³ Symington,⁴ Genersich,⁵ Summa⁶ and Tieken.⁷ The head of the pancreas is usually somewhat hypertrophied and the annular portion causes more or less constriction of the intestine, with consequent dilatation above the constricted part.

3. A third variety is described by Hyrtl⁸ and called by him "pancreas divisum." It consists of a partial separation of the head from the body of the gland, the two portions being connected only by the duct of Wirsung. This separation he supposes to be caused by pressure of

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the mesenteric vessels on the gland substance during development.

4. A fourth variety is the "pancreas minus" of Winslow, which consists of an accessory pancreatic lobule, springing from the head of the main gland and extending along the anterior wall of the duodenum.

5. The fifth and last variety of pancreatic anomalies, and the one with which we are concerned here, is the "pancreas accessorium," first described by Klob⁹ in 1859.

CASES OF ACCESSORY PANCREAS REPORTED.

This abnormality of development is also rare. In a careful search of the literature I was able to find only 20 authenticated cases. Of these 5 were located in the wall of the stomach, 2 in the duodenum, 9 in the jejunum and 4 in the ileum; 3 of them were associated with a diverticulum; 1 in the stomach, and 2 in the ileum.

Klob⁹ reported two cases in 1859 and he was the first to give a histologic description of an accessory pancreas. In one of his cases the accessory pancreas was situated in the wall of the greater curvature of the stomach, midway between the fundus and the pylorus. It is described as a lobulated, pale yellow, rounded, glandular swelling, lying between the serosa and muscularis and having the same histologic structure as normal pancreas. In the other case the accessory mass was situated in the posterior wall of the jejunum, about four inches from the point of entrance of the intestine into the mesentery. In neither of these accessory masses could an excretory duct be found, although numerous small ducts were seen between the lobules.

In 1860 Montgomery¹⁰ reported two cases, one of which was situated in the upper part of the jejunum and the other in the middle of the ileum. No detailed description is given of either of these cases, but he states that no excretory ducts could be found.

Zenker¹¹ reported six cases in 1861. One of these was in the wall of the duodenum, 2.5 cm. from the pylorus of the stomach. Three were in the first coil of the jejunum; two of them close to the duodenum and the other one 16 cm. away from it. In one case two accessory glands were found, one 16 cm. and the other 48 cm. from the duodeno-jejunal junction. The other case presented a diverticulum 5 cm. long and situated 54 cm. above the ileocecal valve. It had a narrow mesentery, rich in fat; and in this adipose tissue, close to the tip of the diverticulum, was found a small nodule of pancreatic tissue, which was connected with the diverticulum by a small excretory duct.

Wagner¹² (1862) reported two cases, one of which was in the small intestine and the other one in the anterior wall of the lesser curvature of the stomach. The latter was elevated 4 mm. above the normal level of the mucosa, which was continued normally over it. In this case no excretory duct was found and no detailed description is given of the case in the intestine.

Gegenbauer¹³ (1863) reported a case in the wall of the stomach, near the lesser curvature and 2 cm. from the pylorus. It was slightly elevated above the normal level of the mucosa and was situated between the latter and the muscularis. There was an excretory duct leading into the stomach.

In 1865 Hyrtl⁸ described a case which was situated in a fold of the peritoneum (plica pancreatico-lienalis). It had a small duct which communicated with the duct of Wirsung in the tail end of the main gland, and between it and the main gland lay the left gastro-epiploic vessels, both of which were abnormally enlarged.

This case, as was pointed out by Glinski,¹⁴ was probably a case of "pancreas divisum," and not a case of "pancreas accessorium." The tail end of the pancreas, during development, was divided by the abnormal size of the left gastro-epiploic vessels, and thus this case corresponds to the description given by Hyrtl of "pancreas divisum."

Neuman¹⁵ described a case in connection with a diverticulum of the ileum. The diverticulum was situated two feet above the ileocecal valve, was 1¼ inches long and ½ inch in diameter, and in shape resembled the finger of a glove. At its tip was a small nodule of pancreatic tissue about as large as a pea, which was connected with the diverticulum by means of a short excretory duct.

Weichselbaum¹⁶ reported two cases in 1883. One of these was in the wall of the stomach, at the tip of a diverticulum, and the other was in the anterior wall of the descending portion of the duodenum.

Nauwerk¹⁷ reported an accessory pancreas in the wall of the ileum, 2.3 meters above the ileocecal valve. It was 9 cm. in length, rather narrow, and slightly enlarged at the distal end, and was covered by the serosa of the intestine and a layer of subserous fat. At its base of attachment the wall of the intestine was slightly drawn out, forming a shallow depression on the mucous surface, in the center of which was found the opening of an excretory duct. This duct was traced through the center of the entire length of the gland tissue.

Letulle¹⁸ published an article on accessory pancreas in which he makes the statement that they are not at all rare, but may be found in about three out of every one hundred autopsies. He does not, however, give a description of any case, neither does he state how many have come under his observation.

Nicholls¹⁹ has described a case which was found in the beginning of the jejunum. It was roughly oval in shape, measured 1.5 by 1 cm. at the base and was elevated above the general level of the serosa. It also projected slightly into the lumen of the intestine. It was composed of multiple lobules of an acinous structure, which were separated from one another by septa of connective tissue and smooth muscle fibers. These lobules had small excretory ducts.

Glinski¹⁴ described a case occurring in the upper portion of the posterior wall of the stomach, 2 cm. from the pylorus. It formed an oval swelling on both the mucous and the serous surfaces of the stomach wall, and the serosa and mucosa were perfectly normal over it. It measured 4.5 by 3 cm. and was 1 cm. thick at its thickest part. It was composed of lobules of pancreatic tissue, which were identical with normal pancreas. They were embedded in the muscular coat of the stomach and were separated from one another by septa of connective tissue, with here and there a septum composed of smooth muscle fibers. In the connective-tissue septa were numerous small ducts, but no excretory duct was found, although it is believed that there was one. The mucosa was normal, but in the submucosa were glands which appeared to be identical with the glands of Brunner of the duodenum.

Wright²⁰ has recently reported an interesting case in connection with a congenital umbilical fistula, in a girl 12 years of age. The fistulous tract was removed with the idea of effecting a cure, and the operation was perfectly successful. There was no connection between the fistula and the intestine. In the tissue removed from this tract was found a small spherical nodule of pancreatic tissue, which was arranged in lobules and

identical with normal pancreas. In the septa between the lobules were small ducts, but no excretory duct was found, although it is supposed that there was one and that it communicated with the exterior. As there had always been a clear serous discharge from the fistula it is supposed that this nodule of pancreatic tissue had a secreting function and that its secretion formed the discharge from the fistula.

A CASE OF RECENT OCCURRENCE.

The specimen now under consideration was found by Dr. Le Count in the course of an autopsy of the body of a young woman. The accessory pancreatic mass was located in the wall of the jejunum, about 15 cm. from the duodeno-jejunal junction. It presented itself as a small, yellowish, slightly raised nodule elevated (at its thickest part) 5 mm. above the general level of the serosa; at its base it measured 17 by 22 mm. Sections show the nodule to be composed of pancreatic tissue, which is embedded in the muscular coat of the intestine and in structure identical with normal pancreas; it contains typical islands of Langerhans. In the connective-tissue septa between the lobules are numerous small ducts, lined with a single layer of columnar epithelium, and here and there are bundles of smooth muscle fibers, ramifying through the gland. The ducts, studied in serial sections, are found to run toward the center of the nodule where they form a large duct which takes almost a direct course toward the mucosa and apparently empties into the intestine. The latter point, however, could not be demonstrated positively, because several sections from this region cut unsatisfactorily.

INVESTIGATIONS AS TO DEVELOPMENT OF PANCREAS.

It is evident that we are dealing here with an accessory pancreas which has an excretory duct and is located in the muscular coat of the jejunum. Cases of this kind are not very common, and the question arises, what is the cause of the occasional multiplicity of the pancreas which normally is single? In attempting to answer this question it is necessary to review briefly the early development of the gland. Here we find that investigators differ somewhat, especially as regards the number of original outgrowths (*uranlagen*) from the intestinal tract. All the later investigators agree, however, that it is developed from at least two or more solid diverticula which go out from that part of the primitive foregut which later becomes the duodenum.

Zimmermann²¹ made a reproduction of human embryos measuring 7 mm. in length, and found that at this stage the pancreas is represented by two outgrowths, one dorsal and one ventral. The latter, which is found a little more distant from the pylorus than the former, he believes to be an outgrowth from the ductus choledochus and not directly from the foregut.

Hamburger²² also found two diverticula, which, in the earliest stage studied by him (four weeks) were placed nearly opposite the ductus choledochus and not in connection with it. One of these, the smaller of the two, was placed a little more distant from the pylorus than the other, and in the fifth week was found to have united with the ductus choledochus. In the sixth week the smaller one emptied into the duodenum in common with the ductus choledochus, and its blind end had united with that of the larger (dorsal) one. The small (ventral) outgrowth now begins to grow more rapidly than the dorsal one, the conditions are soon reversed, and the main portion of the pancreas and the duct of Wirsung are developed from the ventral diverticulum,

while the dorsal one gives rise to the accessory duct of Santorini and the head of the gland.

Wlassow²³ and Hammar²⁴ likewise found two diverticula in embryo pigs and squirrels respectively, and Kollmann²⁵ also is of the opinion that there are two. The latter, however, states also that, according to the latest investigations, it seems quite probable that there are three.

On the other hand, we find that Goepfert,²⁶ Felix,²⁷ Kupfer,²⁸ Stöhr,²⁹ v. Brunn³⁰ and Jankelowitz³¹ claim to have found three pancreatic diverticula in human embryos and in embryos of cats and some of the lower vertebrates, as trout, frogs, toads, etc.

Jankelowitz³¹ studied human embryos and found that, at an early stage (embryos 4.8 mm. long), the pancreas is represented by a dorsal and a right and a left ventral outgrowth. The ventral, which are in connection with the ductus choledochus, unite early to form one bud, and therefore only two diverticula are found at a little later stage of development. This fact he believes to be sufficient to explain why some investigators have found only two *anlagen* for this gland. In support of this view he points out that the embryo studied by Zimmermann²¹ was 7 mm. long and those studied by Hamburger²² were estimated to be four, five and six weeks old, and represent a stage of development after the fusion of the two ventral diverticula has taken place.

THEORY OF ETIOLOGY OF ANOMALIES.

This seems a reasonable solution of the difficulty, and I believe we are justified in concluding that the pancreas is developed from three embryonal matrices, one dorsal and two ventral. As development goes on the two ventral outgrowths fuse and finally give rise to the greater portion of the gland and the main excretory duct. The dorsal one also develops slowly, fuses with the now single ventral diverticulum and gives rise to the head of the gland and the duct of Santorini. If now for any reason one of the original diverticula fails to unite with the others, but goes on in development, we can easily understand how that would give rise to an accessory pancreas. It is also conceivable that all three diverticula may develop separately and thus form two accessory glands in the same body.

This explanation, which was advanced by Zenker¹¹ as early as 1861, is now quite generally accepted, and seems to be free from any serious objections. At that time, however, it was supposed that the pancreas develops from a single diverticulum, and Zenker assumed that, under certain abnormal conditions, there might arise two or more outgrowths and give rise to accessory glands. Glinski¹⁴ carefully reviewed the literature on the early development of the gland, and advanced the theory in regard to the origin of accessory pancreas as it is stated above.

Endres,³² on the other hand, is of the opinion that the pancreas is always developed from a single diverticulum, and that this outgrowth may sometimes be divided by pressure on it from the omphalo-mesenteric vein, the right gastro-epiploic or the inferior pancreaticoduodenal artery, and thus give rise to an accessory gland. This view is now no longer tenable, as it has been shown almost conclusively that the pancreas is not developed from one, but from three diverticula. It is quite probable, however, that the vessels mentioned by Endres may, by abnormal development, prevent the fusion of these diverticula and thus play a very important rôle in the development of accessory pancreas.

The fact that the accessory gland is sometimes found at so great a distance from the main gland can be explained by assuming that the *uranlagen* become separated very early, and one, or two, of them are carried away by the intestine as it increases in length (Gliniski).

SLIGHT CLINICAL INTEREST.

In regard to the clinical importance of the pancreatic anomalies just described, the following can be said: The pancreas minus and divisum, although interesting from an anatomic standpoint, are of little practical importance, as they do not bring about any serious pathologic conditions, nor can they be detected during life. Abnormalities of the duct may occasionally be a factor in causing hemorrhagic pancreatitis from impaction of gallstones in the ampulla of Vater (Opie³³). Annular pancreas may so constrict the bowel as to cause marked dilatation above the point of constriction, as in Ticken's interesting case, or perhaps even complete obstruction. Accessory pancreas may sometimes be a causative factor in the production of diverticula of the intestine, by exerting continuous traction on the intestinal wall, during development (Neumann¹⁶); or, it may at any time become the starting point of a carcinoma (Nicholls¹⁰). This has, however, never been observed. If the swelling protrudes into the lumen of the bowel, and attains a considerable size, it might produce some obstruction to the movement of the intestinal contents; or, perhaps it might cause an intussusception by continuous traction on the inner surface of the intestinal wall, from the passage of the contents over it.

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POISONED WOUNDS BY THE IMPLEMENTS OF WARFARE.

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(Concluded from p. 990.)

V. INFLICTION OF POISONED WOUNDS OR SEVERE INFECTIONS INTO ANIMALS BY VARIOUS MEANS IN FIRING.

The work narrated in the preceding experiments by foreign workers refers to the transmission of bacteria by the act of firing when the organism is placed on the projectile, in the barrel or on cloth. My earlier experiments, already cited, proved the transmission of bacteria when placed on the ball or in the powder. The experiments to be referred to now were undertaken to

show whether transmission could be effected when the organism is placed at any point from the explosive to the point of impact, namely, in the powder, on the wad, on the projectile, in the barrel, on cloth in the trajectory and lastly on the integument at the point of entrance.

Anthrax.—Infection by the implements of warfare was incidentally touched on when we were considering poisoned arrows. It will be remembered that Siegfried mentions that the nations of East Equatorial Africa were said to poison their arrows with the *Bacillus anthracis*. In the references at my disposal I am unable to verify the statement.

Those who will recall the tragedy at Buffalo last year may remember the account of the press reports which referred to the circular found on the assassin's body, which read in the form of instructions on the method of taking life, as recommended by the Nihilists, of whom the perpetrator was said to have been a follower. Among the methods of poisoning, to more effectually insure death, the use of anthrax was noted. If this method of adding to the chances of death in a criminal attempt was ever practiced there is no record of it, to my knowledge, in the literature, yet the septicemia from this source is so similar to that from other micro-organisms that such an infection contracted in the manner mentioned would necessarily remain undetected unless bacteriologic examination of the blood and other tissues were made; on the other hand, the clinical features of malignant edema, tetanus, and the gas bacillus infection are so striking that they have served to identify those infections in a certain percentage of gunshot wounds, long before their biologic features had been determined. It follows, therefore, that to determine the relative frequency of anthrax and all other infections after gunshot wounds, we must depend henceforth on a proper examination of the tissues. Again, whether such an infection through the medium of a poisoned bullet fired from a weapon was a possibility, constituted a source of much doubt before the experiments which I am about to detail were undertaken. This skepticism was more than likely the outcome of the erroneous notion formerly entertained that bullets were purified by the heat of firing. It is interesting to note that Noble and Abel give the amount of heat generated in the chamber of weapons as follows: Krag-Jorgensen, .30 cal., 2,600° C.; Springfield, .45 cal., 2,400° C. This notion also found ample clinical evidence because we know that the majority of gunshot wounds when treated with a clean surgical dressing exhibit few or no signs of sepsis, and, to speak generally, we regard the wounds of this class as surgically pure. Again, when precautions to prevent sepsis have been observed, cases have exhibited some of the most virulent forms of infection, such as those of tetanus, malignant edema, gas bacillus, etc.

Formerly, when bullets were supposed to have been entirely disinfected by the heat incident to the ignition of the powder charge, the source of infection was only supposed to occur: (a) from the clothing when this was first penetrated by the ball, and (b) from the skin at the point of impact, which, as we know, is never clean. Whether infection could come from the ball or other sources remained to be solved. The following experiments at the proximal ranges were done in 1892: Two white rabbits were shot with a .22 caliber revolver. The projectiles were previously infected by smearing the conical end with a culture of anthrax germs from a slant of agar-agar which was prepared from the blood of a

gray mouse that had died from the effects of this micro-organism the day before. In the case of the first rabbit the ball passed through the left ear near the skull. The animal died three days later, and the presence of the *Bacillus anthracis* was confirmed in the blood of the heart, spleen, liver, etc. In the second animal the missile entered the external surface of the left thigh and lodged under the skin of the sacrum. Although droopy on the fourth day, he made a gradual and complete recovery.

We next shot a bull calf with a .38 caliber double-action Colt's revolver, the projectile having been infected with anthrax culture, as in the case of the rabbits. The ball entered the outer aspect of the left thigh and lodged in the perineum. The animal died on the third day, and cover-slip preparations from the blood of the spleen, liver and heart showed the presence of anthrax bacilli.

The next experiments were conducted with the high velocity modified Springfield rifle of .30 caliber, propelling a German-silver-clad bullet weighing 230 grains, with an initial velocity of 2,200 foot seconds. It was impressed with 36 grains of smokeless powder. Four rabbits were used altogether. They were shot through the ears at a distance of ten feet. The projectiles were in each instance infected, at the conical end, with a fresh culture of the *Bacillus anthracis* on agar-agar. The first animal died from shock two hours after the injury, the ball having penetrated both ears low down and the intervening scalp. Twelve cover-slip and two agar-agar slants prepared from the blood in the track of the bullet twenty-four hours after death failed to show the presence of anthrax. The results were likewise negative in rabbit No. 2, and positive in 3 and 4.

As stated, the foregoing experiments were conducted at the relatively short ranges. It was next in order to show the fate of micro-organisms on projectiles when fired at the actual ranges of, say, 300 and 500 yards. The following experiments were undertaken at Fort Logan in 1895, as follows:

Five sheep were shot at 300 and 500 yards with the 230-grain steel-jacketed bullet of the .30 caliber Krag-Jorgensen rifle. The projectile was propelled by 37 grains of Peyton smokeless powder. The point of each projectile was infected a few moments before the firing took place with a recent virulent culture of the *Bacillus anthracis* on an agar-agar slant. Four of the animals were wounded. One was killed outright; the bullet from the 500-yard stand passed through the large vessels of the neck and caused death by hemorrhage in a few minutes. Of the wounded animals, No. 1 received a wound at 500 yards on the inside of the right ham near the shank. The projectile passed out, fracturing the ham bone. Death ensued 60 hours after the injury. Cover-slip preparations from the blood of the liver, spleen and heart, stained with a watery solution of gentian violet, revealed the *Bacillus anthracis*. No. 4 was hit at 300 yards in the left shoulder, the projectile making its exit on the right side of the neck. The animal never recovered from the effects of the injury sufficiently to enable him to regain his feet. He refused food and drink from the time he was shot until he died, on the fifth day. Cover-slips prepared from the blood of the spleen, liver and heart showed anthrax bacilli in nearly every field. The other two animals, shot in the skin of the abdomen and in the right foreleg, respectively, at 300 yards, recovered entirely.

These results show conclusively that the infection of anthrax can be carried at long range and that it is possible to thus infect susceptible animals.

Following on the evidence that unconsumed grains of black and smokeless powders carry specific micro-organisms into media, it was of interest to know if there was enough of a culture so carried to communicate infection, or whether the modifying influences of heat caused attenuation enough to prevent the typical picture of a given infection. For this purpose we infected black and smokeless powders with a culture of anthrax and fired into rabbits as follows:

Black Gunpowder.—We loaded six shells with 18 grains of powder in each shell. The powder was infected with a culture of anthrax. The weapon used was a .38 caliber Colt's revolver, range one foot. Six animals were selected, and each animal was shot in one or both ears. In four of the animals the unburnt grains of powder failed to penetrate the skin entirely, the grains projected above the surface, while in the other two the powder grains were for the most part well embedded in the skin and areolar tissue. The latter two animals sickened on the third day. One of them died on the fourth day, while the other recovered entirely. Cover-slips prepared from the blood of the heart, spleen and liver of the dead animal stained in a watery solution of methylene blue revealed anthrax bacilli in nearly every field.

Smokeless Powder.—Of three rabbits shot in the ears at a distance of four feet by the Krag-Jorgensen rifle loaded with 37 grains (blank) of the Peyton powder, which had previously been contaminated with anthrax spores in the manner already described when speaking of infection of black gunpowder, one of the animals sickened on the third day and died on the fifth day. Cover-slips properly prepared from the blood of the heart, liver and spleen revealed the presence of anthrax bacilli, though but few in number. Sections of the liver and spleen, stained by Gram's method, exhibited the presence of the organism in the vessels.

Streptococcus of Marmorek.—Müller has lately worked with infected bullets to show whether micro-organisms carried by a ball still retain their virulence. With this object in view he used rabbits. They were shot in the fleshy part of the ham under strict precautions. The part to be traversed was shaved, washed with soap and water and treated with an antiseptic poultice before the firing commenced, and the wounded animals were taken to a dressing room and their wounds attended to with scrupulous care to prevent other infection. The balls of the steel-clad type from the military rifle of the Swiss were infected with the *Streptococcus of Marmorek* which kills rabbits in 20 to 48 hours. In the first series of experiments he inoculated the projectiles on the point; in the second, the organism was placed on the body of the bullets. In the first series the animals, four in number, succumbed to the infection in less than 24 hours; in the second series the animals, three in all, died in 30 to 36 hours. The greater length of time required to kill in the latter cases is attributed by the author to the reduction of the dose by loss in the friction of the projectile against the inside of the barrel. He next placed the organism on the inside of the barrel, and then again on cloths, in order to learn whether infection might be carried by a sterile ball in its passage through an infected barrel, or infected cloth. He demonstrated by firing into rabbits as before that infection was carried from both the barrel and cloth, the animals dying from the streptococcus infection. It would seem from the foregoing experiments that the heat imparted to the ball by the act of ignition and the friction in the

barrel, although the projectile is impressed with a velocity of 600 m.s., is not enough to entirely destroy the streptococcus nor to modify its virulence.

Tetanus on Projectiles.—In experiments conducted in 1892 with bullets of various calibers, we failed to communicate tetanus to horses. On the other hand, as will be shown later, Strick has more recently demonstrated that five out of six rabbits died from tetanus communicated by bullets infected with a culture of the organism, also Nimier and Vincent succeeded in transmitting tetanus to a rabbit with fatal results by shooting with smokeless powder previously infected with a culture of tetanus.

In recent experiments on animals we succeeded in communicating tetanus in 69.5 per cent. of the cases by methods as follows: The experiments were conducted with the .22 caliber toy pistol. An artificial tetanus earth was made by mixing one quart of sterile earth with one agar-agar culture, after the toxin had been destroyed by heating at 65° C. for five minutes. The animals were shot in the fleshy part of the thigh.

(a) *Transmission by Infecting Black Gunpowder.*—One-half grain of tetanus earth was mixed with the powder in each of three blank cartridges with which three white rats were shot at a distance of two inches. Two out of the three animals developed tetanus and died on the fifth and sixth day respectively.

(b) *Transmission by Infecting the Wads with the Tetanus Earth.*—Four wads were infected on their outer surface with a half grain each of the earth. Four rats were shot into as stated above. Two died immediately from shock and the other two succumbed five days later from tetanus.

(c) *Transmission by Placing the Earth on the Projectile.*—These were infected by placing the earth in three grooves running parallel with the long axis of the bullet. Three rabbits shot died with typical symptoms of tetanus on the sixth, seventh and eighth day respectively. Out of three guinea-pigs shot in the same way, two died on the sixth and seventh day.

(d) *Transmission by Placing One Grain of the Tetanus Earth in the Barrel.*—Three white rats were shot at two inches with blank cartridges. Two of the animals died from tetanus on the fifth day.

(e) *Transmission by Shooting a Blank Cartridge Through a Piece of Gauze Previously Contaminated with the Tetanus Earth, the Gauze Lying Against the Part.*—Out of five white rats shot in this manner three succumbed to tetanus on the fifth and sixth day.

(f) *Transmission by Placing One Grain of Wet Tetanus Earth on the Skin of the Animal at the Point Penetrated by the Charge.*—Four animals were thus shot with blank cartridges, two dying of typical tetanus on the fifth and sixth day.

(g) *Transmission by Infecting Smokeless Powder.*—The powder was infected as before. Three white rats were shot at a range of two inches. One of them developed tetanus on the fifth day and eventually recovered. The other two were negative.

The control animals shot in the above manner without the use of tetanus earth gave negative results without exception. As stated already the fatality from tetanus attending these experiments aggregates 69.5 per cent. It is fair to assume that this percentage would have been greater with a pure culture of tetanus. The artificial tetanus earth was used to simulate the actual conditions under which tetanus infections usually occur.

Bacillus Aerogenes Capsulatus.—Welch has shown in his Shattuck Lecture that infection from this organism

is most frequently seen in compound fractures, and next in gunshot wounds. In recent experiments to demonstrate the transmission of this bacillus we obtained positive results. We infected three guinea-pigs by shooting them with an infected bullet from the toy pistol at close range. One died on the second day from general peritonitis, the ball having penetrated the abdomen; we killed the other two on the third day. They were placed in the incubator for twelve hours, when the typical emphysematous appearance was noted. The bacillus was obtained from the blood, serous membranes and subcutaneous tissue. The identity of the organism was established by means of the rabbit test described by Welch. Two control animals shot in the same manner were negative. The possibility of transmitting this organism by the various other means in shooting was taken for granted.

To determine the effect of firing on vegetable poisons we conducted the following experiments with curare and ricin as examples of powerful poisons when introduced into wounds.

Curare: Rats were shot in the thigh with a .22 caliber pistol loaded with blank ammunition. About one-fortieth of a grain of the sulphate was used in each experiment.

In Black Gunpowder: Out of four animals thus inoculated two died immediately with typical symptoms of the drug. The other two recovered.

On the Wad: Two animals thus inoculated died immediately.

In the Barrel: Two of the four animals inoculated died.

On Cloth: Of the two animals experimented on one died and the other recovered.

On the Skin: Of two animals thus shot both died.

Control animals inoculated with a similar dose subcutaneously administered died without exception.

Ricin: Two rats were shot as above stated, the ricin being placed on the wad; one recovered, and one died in the same time as the control animal, with the usual typical lesions.

The foregoing results with vegetable poisons were so convincing that the possibility of inflicting poisoned wounds with firearms in the various ways mentioned was considered certain, and pursued no further.

That poisoned wounds or infections can be communicated by the implements of warfare into susceptible animals and into man is well established by experimentation. In order to emphasize these facts let us take tetanus as an example of the infections in general and let us consider its occurrence in wounds, and in gunshot wounds in particular, as shown by clinical evidence.

VI. CLINICAL EVIDENCE OF POISONED WOUNDS, AND THE CHARACTER OF THE LESIONS AS A PRE-DISPOSING FACTOR.

Before we enter on a more extended discussion of the transmission of tetanus by the missiles from firearms as shown by clinical evidence, we may recall the fact that tetanus earth was a favorite poison among the substances used to poison arrows, notably by the inhabitants of the New Hebrides. We may recall the fact also that the occurrence of tetanus after gunshot injuries was so frequent, and the fatality attending this complication was so large, that few of the infections in war wounds have been more extensively dwelt on by the older writers on military surgery. Surgeons in civil and military practice have seen the disease follow gunshot wounds so frequently that a conviction has

existed in the minds of many that these wounds possess an etiologic factor of their own, which has been variously attributed to the ball, the powder, the wad or the character of the lesion made by the mechanical effects of the projectile on the tissues. Of 246,712 gunshot wounds which occurred during the Civil War, Otis informs us that 505 of these were complicated by tetanus, or one case of tetanus to every 500 cases of injury.

Its frequency in war wounds has been attested by many writers besides Otis. Table A from Nimier and Laval by Mathieu, shows its occurrence in a number of the great wars, the general average being about one case of tetanus in every 300 wounded.

TABLE A.—TETANUS IN WAR. (BY MATHIEU.)

Wars.	Cases of Tetanus.	No. of Wounded.	Percentage.
British Army in India (1782)...	20	810	1/40 or 2.47
British Army in Spain (1811-14)	263	20,683	1/78 or 1.25
British Army in Crimea.....	26	12,094	1/465 or 0.21
Spanish Army in Morocco— wounded cared for in Africa...	1	56	1/56 or 1.78
Spanish Army in Morocco— wounded cared for in Spain...	4	3,920	1/980 or 0.10
French Army in Cairo (1798)...	7	200	1/28 or 3.50
French Army before Constantinople (1836).....	10	170	1/17 or 5.68
French Army in Crimea.....	120	39,868	1/332 or 0.30
French - Sardinian Hospitals (1859).....	153	21,967	1/143 or 0.69
Prussian Army (1864).....	14	1,968	1/140 or 0.71
Hanoverian Army after Langensalza (1866).....	13	1,092	1/84 or 1.20
German Army (1870-71).....	350	99,566	1/285 or 0.35
Austrian Army in Bosnia (1878)	16	3,878	1/234 or 0.41
United States Army, Civil War...	505	246,712	1/488 or 0.20

In this country the frequency of the affection after wounds by the toy pistol has called forth renewed attention to the etiologic factors involved. The wounds referred to are usually inflicted by the ordinary .22 caliber revolver, carrying six blank cartridges, loaded with an average of three grains of black powder held in place by a pasteboard wad. The custom of celebrating the anniversary of our national independence by the use of explosives has grouped these cases very much in the same way that we find them in the statistics of the different wars. Until the use of the toy pistol was prohibited by a number of the state legislatures, the infection from this source was striking in frequency. Thus Park, whose attention was specially called to the subject, informs us that sixty cases of tetanus followed toy-pistol injuries in Chicago during the month of July, 1881. There were 38 cases of tetanus in New York City in 1899; 33 cases in 1900, and 27 cases in 1901—making a total of 98 cases. The health reports show that 35 per cent. of the cases occurred in the month of July. The reports of the last three years from the Board of Health of Philadelphia show that of 29 traumatic cases reported in males, 12 of them, or 41 per cent., were from some form of gunshot injury, the toy pistol being the most frequent offender.

The occurrence of tetanus after injury by blank ammunition has been the subject of special study by a number of investigators. The work has been directed towards the bacteriology of the powder and the wad, by means of cultures and inoculation into animals. The possible presence of the *Bacillus nicolai* in either or both of these (the powder and the wad) should not be considered improbable. In the former, such a contamination might easily be the result of accident in the same way that dust containing the spores of the organism finds its way into the explosive by the ordinary operations of handling. As to the wads, our investigations go to show that in the process of manufacture the cardboard and other materials for wadding undergo no treatment that is calculated to destroy resistant bacteria that

primarily exist in the trashy materials employed, viz.: dirty rags, old paper, wood pulp, wool, etc.

Wells of Chicago had his attention drawn specially to the epidemic of tetanus which followed July 4, 1899, having noted five cases in the Cook County Hospital and private practice together. All the cases were the results of wounds from blank cartridges, 60 per cent. of the injuries being in the left hand.

In order to determine the possible presence of tetanus in the cartridges, 200 rounds of the ammunition were examined by him from five different manufacturers with negative results. Cultural inoculation experiments were made as follows: The wads, powder and shells were treated by the Kitasato method for isolating the tetanus bacillus, i. e., by heating to 85° C. for 45 minutes to kill all but resisting spores. Glucose agar was generally used, but bouillon, glycerin agar and gelatin were tried. These cultures failing to show the organism sought, others were made without the preliminary application of heat, with the same negative results. A series of inoculations of guinea-pigs and house mice followed. Some deaths from pus infection were noted, but the tetanus bacillus was never found. The inoculations were made in various series with wads, powder, agar and bouillon cultures with and without preliminary heating.

The negative results of his well-directed efforts were in the nature of a surprise, and naturally disappointing, since he had good reason to suspect the source of infection to come from the ammunition as a result of accidental contamination at least.

In the report of the Health Department of Boston, Mass., for 1900, reference is made to the occurrence of seven cases of tetanus following July 4 of the same year. The director of the laboratory made many ineffectual attempts to locate the tetanus bacillus in the ammunition. "The method consisted in: (1) separating the wads, powder and shells of 350 cartridges of different calibers; (2) injecting these directly, or extracts and anaërobic cultures made from them, into guinea-pigs and rabbits; (3) microscopic examination of the cultures, extracts, etc. Nothing resembling the tetanus bacillus was observed, nor did any of the animals exhibit signs of tetanus." In his conclusion the author attributes the occurrence of the infection to the serious nature of the injury and the circumstances under which it occurs.

In our experiments we examined:

1. Forty-one samples of powder obtained from cartridges of varying calibers.
2. Thirty samples of powder from six different kinds of firecrackers.
3. Twenty-four wads from the toy-pistol ammunition.
4. Thirty samples of cardboard from the different kinds of firecrackers above cited.

Attempts were made to determine the presence of tetanus or malignant edema by inoculation directly into animals, by anaërobic cultures and by inoculation of these cultures. Inoculations were also made into hematomata, which will be shown later to give a special predisposition to infection. In no case were we able to determine the presence of the organisms mentioned.

We find, then, that out of 675 samples of powders and wads examined, the *Bacillus of Nicolai* was absent in every instance. From the foregoing it is apparent that we must look to other sources of infection than those suggested in the ammunition.

In considering the source of infection in gunshot wounds which, reasoning by exclusion, can only arise from, (1) the integument at the seat of injury, (2) the

clothing traversed by the missile, (3) accidental and criminal contamination of the ammunition, (4) infection of the gun barrel; there are certain special features in these wounds that favor the development of tetanus and other infections to a marked degree, and these features deserve special consideration.

We may start out with the proposition that all wounds are more or less infected; that is, that no wound is bacteriologically clean. Such an assumption is even true of operative wounds done under the strictest technic. Notwithstanding this fact, we know that these wounds, though contaminated, for all practical purposes in surgical practice heal perfectly, without pus, and give the best of results. The factors of a suitable soil, on the one hand, and a proper degree of virulence, on the other, play an important rôle in the development of infection in all wounds; and, as we will show, the former of these factors has a special application in gunshot wounds.

The experiments of Lwowitch, Strick and Dorst on the development of infection in the presence of hematoma have an interesting application in this instance, because we know that hematomata, more or less extensive, frequently accompany the lesion in a gunshot wound.

Lwowitch obtained the spores of the *Bacillus nicolai* from a bouillon culture. After subjecting them to a temperature of 70° C. for an hour he injected an aqueous solution of one-half to one c.c. under the skin or in the muscles of the thigh of a rabbit without effect. If, on the contrary, the injection was preceded by creating a hematoma by cutting the femoral artery near the knee and the same amount of the aqueous solution was then injected in the hematoma, tetanus developed, at first localized, then general in character, finally ending in death. This showed that the hematoma favored the development of tetanus to a high degree.

The work of Strick was projected on the same lines. He produced a hematoma by cutting the femoral artery in five rabbits, and he injected a certain spore mass of tetanus in each hematoma. All of the animals developed tetanus in five to six days, and death followed in one to two days later. As a control he injected ten times the known amount of tetanus directly into the thigh muscles of six animals with negative results. He found that a hematoma favored the development of tetanus so much that 50 times the spore mass could be placed in the tissue of the control animals without any reaction taking place. In order to prove that the development of the infection was the result of the hematoma and not to the loss of resistance incident to shock or hemorrhage, he produced a hematoma in one of the thighs of six control animals, and in the other thigh he injected 20, 40 and 100 times the spore mass; whilst in six other animals he injected the regular amount of the spore mass into the hematomata. The animals directly injected in the hematomata died of tetanus in six to eight days, whilst in those animals with a hematoma in one leg and the injection in the other, there was no reaction. In his final experiments he found that the predisposition to tetanus from a hematoma was so great that a dose 1,000 less than that which produces tetanus in a sound animal was sufficient to provoke tetanus when it was injected in a hematoma.

In order to show the relative predisposition to the development of tetanus between a hematoma and the lesion found in a gunshot wound, he shot six rabbits with bullets primarily infected with tetanus. The ani-

mals developed tetanus on the third day and died on the fifth. He concludes that gunshot wounds, in consequence of the tissue lesion, offer an unusually favorable soil for the development of tetanus. Compared to the infection developed by injecting in hematomata the onset of symptoms is twice as quick and death ensues earlier.

Dorst has shown that the coefficient of susceptibility increases in hematomata when other organisms than tetanus are employed. He demonstrated this as follows: he made 34 experiments on rabbits with staphylococcus aureus and pneumococcus. He found that one-eighth of a platinum loop of the former caused an abscess in a hematoma, whilst it required one-fourth of a loop to produce death. The controls injected with the same dose in the muscle tissue or subcutaneously showed no reaction. The controls showed reaction, however, with four loops, and it required as much as eight loops to cause death. He next employed the pneumococcus, to which the rabbit is specially susceptible. He used an aqueous solution of the organism of which one-fourth to one-tenth c.c. produced no effect when injected in muscle tissue; and yet one-hundredth of a c.c. of the same solution produced death when injected in a hematoma.

The results of the experiments by Lwowitch, Strick and Dorst show conclusively that hematomata augment the susceptibility to infection. In regard to the susceptibility conferred by hematomata and the lesion in gunshot wounds, we find that they confer great susceptibility, and we may recall that Strick goes so far as to say that the onset of symptoms in animals shot with tetanus balls is twice as quick as it is after injecting the spore mass into hematomata. If all the pathogenic microbes were as virulent as tetanus, and all gunshot wounds presented suitable hematomata, it follows that infection would occur in every instance. We are aware of the varying degree of virulence of different bacteria and we can demonstrate also the varying degrees of hematomata and other lesions in gunshot wounds which account in great measure for the occurrence of infection in some cases and its absence in others.

Another condition entering into the question of susceptibility to infection is that of necrosis arising from burning. The following experiments were suggested because clinically tetanus is often seen to follow a burn from various causes, and also because of its frequent occurrence in powder burn, in which there is more or less burning or singeing in addition to the lesion that the force of the explosion confers. We experimented on eight guinea-pigs by inoculating tetanus earth into incised and burned wounds. In four of the animals we made a wound by burning through the skin of the thigh with a red-hot knife, and in the other four we made a simple incised wound. An amount of the tetanus earth that could be held on the end of a hat-pin was placed in each wound of the two series of animals. Those having burned wounds sickened on the third day and died on the fifth day after inoculation, with typical symptoms of tetanus. The animals inoculated into simple incised wounds all recovered, at no time manifesting any symptoms of tetanus. It is thus seen that experimentally, as well as clinically, we must consider burning as an additional factor in augmenting the susceptibility to infection, and one that necessarily enters into gunshot wounds at close quarter.

The extent of the lesion in gunshot wounds, as we know, is modified by a number of factors, and these are

well exemplified by comparing the character of the wound conferred by the reduced caliber bullet of the present military rifle, which is so often referred to as the humane bullet, with that inflicted by the larger caliber bullet of the military rifle in use two decades ago. In order to show the difference in the susceptibility of the lesion to infection, let us again take up tetanus as an example of the infections. I believe such a study will convince us that the reduction in the amount of infection in recent wars is not altogether due to antiseptics, and that much of the credit should be attributed to the change in the armament.

VII. DIFFERENCE IN THE LESION OF THE OLD AND NEW ARMAMENT ONE OF THE PROBABLE CAUSES OF THE REDUCTION OF TETANUS IN WAR.

The humane features of the new military rifle are so generally accepted that it will suffice to review briefly the differences in the old and new armament that have led to the material reduction of destructive effects in the latter. From 1886 to 1893 all the armies of the world, one after another, proceeded to change their military rifle, which formerly employed a cylindro-conoidal lead bullet, weighing approximately 500 grains and of about .45 caliber. The projectile was impressed by a velocity of translation of about 1,300 f.s., with a velocity of rotation on its long axis something like 800 turns per second. The explosive charge for our own army rifle was 70 grains of black powder, which approximated very nearly that of other armies. Between the dates above mentioned all the governments except China changed their armament to the reduced caliber rifle of a type corresponding to the Krag-Jorgensen, in use at present in the United States Army, the chief features of which are, so far as the surgeon is concerned, as follows: The projectile is .30 calibers, composed of a lead nucleus enclosed in a hard steel armor. Its weight is 220 grains, and it is impressed by a velocity of translation of 2,200 f.s. The velocity of rotation on its long axis at the muzzle is 2,400 turns per second. It is thus seen that the bullet of the military rifle of to-day as compared to that of a generation since has been reduced 15 calibers in diameter and 280 grains in weight, while the velocity of translation has been nearly doubled and that of rotation has been trebled, and it has this additional feature: on account of its hard steel envelope it is not susceptible to deformation by any amount of resistance in the human body. Because of these striking differences in the two projectiles, the character of the lesion in gunshot wounds in war has been very much modified. The so-called humane effects of the reduced caliber bullet have been specially noted in the wounds of (1) soft parts, (2) joint ends of bones, and (3) shafts of long bones.

Soft Parts.—With the old 500-grain bullet, in the soft parts the wounds were more liable to be lacerated at all the ranges, and this was especially so in the middle and remote ranges as the remaining velocity diminished, or when the projectile was deformed by ricochet against resistant structures before impact. Such wounds were always infected by the large, irregular surface of the lead which afforded every opportunity for the lodgment of dirt. The local destruction of tissue was not only marked in the limits of the channel track, but the resulting traumatism was evident in hemorrhages and conditions inviting necrosis of the parts beyond.

The extent of the traumatism by the hard, steel-clad bullet with polished exterior is much less when the normal bullet impressed with superior velocity traverses soft parts only. The lesion partakes more of the

character of an incised wound. The area of destruction about the channel track is much less; the opportunities for necrosis are practically *nil*. The amount of infection is less because the steel mantle retains its smooth exterior better than the lead, which was easily indented. In ricochet, if the projectile encounters much resistance, it disintegrates into small fragments which readily lose their velocity and therefore their value as missiles. A slight amount of resistance only serves to flatten or indent the conical end of the steel mantle without grooving or furrowing, which is so apt to be the case with the softer metal, while the amount of infection transported by the steel-clad bullet is at all times less than one finds in the case of the lead bullet.

The experiments of Karlinski have a special bearing on the amount of lesion inflicted and dirt carried by the two bullets. By shooting in gelatin cylinders he noticed more extensive fissuring with the large caliber leaden bullet. Particles of cloth, thread, etc., carried by the ball penetrated into the fissures, eccentrically disposed about the channel track, to a distance of 13 cm. The experiments were repeated on a dog whose hindquarters were enveloped in a green cloth. At 100 meters the 6 mm. jacketed bullet passed through the hams and carried particles of cloth to a depth of 2 cm. about the channel track.

Schwarzenbach has experimented on animals in the same direction with similar results, and his views of primary infection which are entertained by Brunner, Karlinski and others, are based on experimental proof. We know to-day that enough extraneous matter enters a gunshot wound at the time of its occurrence to account for all the phenomena of infection that often develop. We are no longer justified in stating that the fate of a patient who has sustained a gunshot wound is in the hands of the one who applies the first dressing. Such teaching is not only erroneous, but it is misleading and dangerous. In speaking thus we surmise that the surgeon has taken the usual precautions to prevent additional infection. We must take for granted, also, that he has refrained from using so much as a clean probe or his clean finger to explore the wound, a procedure which, in either case, is apt to add to the lesion and render the soil more favorable to the development of existing infection. Unless the reasons for interference are urgent, we should remember that the less we do the more we accomplish, or as Koller, one of Tavel's collaborators, has aptly put it, "*moins on fait, mieux on fait.*"

Joint Ends of Bones.—Here the amount of destruction generally corresponds to the sectional area of the bullet. The lesion is marked by a clean-cut perforation which tends to heal rapidly with a clean dressing and fixation.

Shafts of Long Bones.—When the shafts of the long bones are traversed in the ranges extending to about 300 yards, the superior velocity and resistance together cause great destructive effects, and for these so-called explosive ranges the character of the injury is quite similar to that observed in the case of the old ball. One sees in a wound like this an amount of lesion that is no longer limited by the channel track. Fragments of bone, ranging from very small sand to spiculæ half an inch or more in size, have been driven into the soft parts by the energy transmitted from the projectile. Such a wound affords ample opportunity for the development of infection because of the large extent of the traumatism. In the middle and remote ranges, however, the lesion to the diaphyses again takes the char-

acter of clean-cut perforations with possibly long subperiosteal fissures.

It is reasonable to suppose that a great deal of the absence of infection in the war wounds of to-day, including the rarity of tetanus, is due to the change in character of the wounds in war, which in turn depends on the modifications in the armament of the nations. The amount of destructive effects, as already noted, is specially shown within the zone of explosive effects—up to 300 yards, and, depending on the resistance encountered—up to 500 yards. The large majority of the battle wounds of to-day are seldom inflicted within the former of these ranges, namely, 300 yards. We might also say that the reduction of infection, including tetanus, in war wounds, is incidentally due to the alteration in battle tactics. In the days of low velocity weapons propelling large leaden bullets, the tactician was prone to marshal his forces *en masse* in all frontal attacks, the last act in the struggle being a charge with fixed bayonets. The wounds at these proximal ranges were attended with extensive lesion which favored infection to a marked degree. To-day, owing to the extended range of the new armament and the deadliness of the fire at proximal ranges, the tactician deploys his soldiers in the form of patrols composed of a few men in groups. His efforts on the terrain are directed toward flank movements. Frontal attacks end so disastrously, as a rule, that they are no longer practiced except in those cases where the advantage is manifest. As a result of this change, the large majority of battle wounds are received at middle and remote ranges, namely, from 800 to 2,000 yards, where the humane features of the small jacketed bullet are specially shown.

Our experience in Cuba sustains this view. The cases of infection were very few, and out of 1,400 wounded at El Caney and San Juan, there was not one case of tetanus noted. The range in both engagements was at all times beyond the zone of explosive effects, as noted by the reports of the participants and the absence of extensive lesions so characteristic of wounds inflicted at close quarter. On the other hand, out of 3,401 cases of gunshot injury reported from the Philippine insurrection, including the advance on Pekin, there are 8 cases of death from tetanus reported. It will be seen by the tabular statement that five of the cases occurred in men wounded by our own service rifle.

CASES OF TETANUS FROM GUNSHOT WOUNDS, 1898 TO 1901, INCLUSIVE.

Status: Regulars, 6; volunteers, 3. Total, 9.

Place: United States, 1; * Philippines, 8. Total, 9.

Missile: Krag-Jorgensen, 5; Mauser, 0; Remington, 1; pistol, cal. .30, 1; shrapnel, 1; undesignated, 1. Total, 9.

The cards show that the wounds were inflicted mostly by accident at close range. The lesion, as a rule, was more than likely lacerated by the superior energy of the missile near the muzzle and the explosion of the powder gases, thus causing a wound with special predisposition to the development of tetanus.

The rarity of tetanus in the Anglo-Boer war has been touched on by the English surgeons. Their list of casualties is much larger than that from any war since the adoption of the reduced caliber weapon, viz.:

ANGLO-BOER WAR, BRITISH ARMY.

Total killed	5,774
Wounded	22,829
Ratio of killed to wounded	1 to 3.9
Died of wounds	3.7 per cent.

* This case occurred at Fort Ringgold, Texas, the character of bullet not designated.

This war set aside forever the doctrine that frontal attacks *en masse* could ever again be practiced in battle. With rare exceptions the engagements were waged at the middle and remote ranges.

Although it is yet early to speak positively, Surgeon-Colonel W. F. Stevenson, of the English army, professor of military surgery at Netley, who was engaged in the line of communication during the entire war, informs me, under date of Oct. 1, 1902, "that not nearly all the returns had as yet been received from the Cape, but so far as returns had come to hand no case of tetanus had been recorded." He saw no cases himself, nor did he hear of any. Doubtless the full report when published will show some cases, but they will be few as compared to the number in former wars, or even to the number noted in the gunshot injuries in civil practice to-day.

Although it seems well established that the lesion conferred by the reduced caliber bullet does not predispose to infection as much as that from the old leaden bullet, still the blank ammunition used in the new armament appears to confer a lesion that gives a definite predisposition to the development of tetanus at least.

Deubler records 20 cases of tetanus occurring in recent maneuvers of the Austrian army. Of this number 17 occurred from accidental gunshot injuries by blank cartridges loaded with smokeless powder. The author points out the increase of tetanus since the introduction of the new explosive, but he attributes this to the wadding, which is larger and more carefully packed in the smokeless powder cartridge to insure a louder report when the rifle is discharged, the object being to simulate the conditions in war. Investigation showed it to be contaminated, although it is not stated that tetanus spores were present. We believe that it would be more correct, in view of recent investigations, to attribute the occurrence of the tetanus to special features in the lesion conferred by the new explosive as well as by the wad, and to take for granted that the source of infection was from dirt in the barrel, the clothing or the skin.

VIII. CONCLUSIONS.

The literature of poisoned wounds gives ample evidence that the custom of poisoning the implements of warfare, such as arrow heads, lances and swords, has been practiced from prehistoric times to the present day. From the state of our present knowledge of the potency of certain chemical and bacteriologic poisons we have reason to believe that the custom mentioned of thus adding to the deadliness of the injuries inflicted in war, in the hunt and in criminal attempts, was undoubtedly successful in a large percentage of the cases. From the description of the poisons used and the sources of the same, it is evident that not only vegetable, but also bacterial poisons were employed, as shown by the experiments of Ledantec.

The transmission of poisons into wounds by the old implements was easily accomplished. The introduction of firearms in about the fourteenth century threw much doubt on the possibility of still continuing the practice of the ancients.

Although the composition and manufacture of ammunition, with the exception of the wad, rather negative the presence of bacteria in original packages, we must admit that the explosive and the ball are contaminated, as shown by our observations, in 12 per cent. and 47 per cent., respectively; and further, that they become contaminated invariably by handling. The wad and wadding materials are always contaminated. There is noth-

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ing in the act of firing, either from the heat generated by the explosive, or that due to friction, to destroy bacteria existing in the powder, in the wad, on the ball or in the barrel of a gun; and, when distinct bacteria are placed anywhere in the ammunition, including both black and smokeless powder, or in the barrel before firing, they can be invariably recovered when shot into media, as we were able to prove in our early work with anthrax, and as has been more recently demonstrated by Pustoschkin while working with the *Bacillus coli*, *Bacillus ruber*, *Bacillus subtilis* and *Streptococcus pyogenes*.

The results in the foregoing experiments warranted the belief that poisoned wounds could be inflicted by firearms when specific pathogenic bacteria were placed in the ammunition or in the barrel, and, as a matter of fact, in 1892 we demonstrated this with anthrax placed on bullets, and again, in 1895, when the organism was placed in either smokeless or black gunpowder. With the exception of infecting the powder, the experiments referred to by us have been confirmed and elaborated by Probst, Dorst, Strick and others working with various bacteria. Taking tetanus as the ideal organism with which a wound may be poisoned, we have seen in our later experiments that the organism can be transmitted into animals with fatal results when it is placed at any point from the powder to the point of impact on the skin. It follows from the work of the different observers that all forms of bacterial life can be transmitted by portable firearms, and that gunshot wounds can be infected or poisoned when virulent pathogenic organisms are designedly employed. We should bear in mind, however, that when a gunshot wound is found to be primarily infected, the infection may have come from other sources than those mentioned in the ammunition or barrel, because infected clothing or skin may be carried into the wound by a sterile missile.

Aside from the rôle that is played by the resistance of the individual and the virulence of the organism in the infection of wounds, the character of the lesion, so far as this relates to the local resistance, is of prime importance. We know now that hematmata confer a special predisposition to infection, and as the lesion of a gunshot wound often partakes of the nature of a hematoma, in addition to lacerations and other injuries leading to a condition of necrosis, we must regard the wounds from firearms, everything considered, at least as susceptible to infection as hematmata, and Strick's experimental work goes to show that they are even more so. We have shown also that necrosis caused by burning is an additional predisposing factor in wound infection, and one that we may consider with propriety in toy-pistol tetanus, as well as the tetanus from powder burn occurring with other weapons, when the shot is received at contact or thereabouts.

Concerning the possibility of transmitting vegetable poisons into wounds, if we take curare and ricin as examples of such poisons we find that there is nothing in the act of firing to destroy their lethal properties, and that they are readily conveyed into wounds when placed in the powder, on the ball or in the barrel. Toxins and animal poisons, like snake venom, can undoubtedly be conveyed in the same manner.

Finally, we have to conclude that all forms of bacterial life and animal and vegetable poisons may be conveyed into wounds made by firearms, and that the clinical evidence of poison in the case of bacteria depends on the variation of the factors already mentioned. The clinical evidence of vegetable poisons, on the other hand,

is not so dependent on the amount of the lesion; in fact, our experiments show that clean incised wounds absorb the poison more readily than other wounds, and that death is more rapid.

Considered in the light of our present knowledge, the facts mentioned are so susceptible of proof that it becomes the duty of the surgeon in all criminal attempts to make a thorough examination of the ammunition and weapon. This should include a bacteriologic and chemical study of the powder, the bullet and the barrel as follows:

1. If powder grains are found in the clothing or wound they should be carefully collected for examination.
2. The projectile inflicting the wound when recovered should be at once dropped into media with sterile forceps.
3. If the wound has been the result of a ricochet shot, the point of impact before penetrating the skin should be examined for the presence of poison.
4. The inside of the barrel of the weapon should be examined for specific micro-organisms.
5. The examination should also include a thorough study of all the ammunition remaining in the weapon.
6. The same steps should be observed in examinations for the presence of toxins, animal and vegetable poisons. In this connection the following passage from the Huxley Lecture by Welch describes the method of identification: "The only certain means of detecting toxins of the class of diphtheria or tetanus toxin, snake venom and certain vegetable poisons of the same category is their neutralization by the corresponding antitoxic sera. Occasion may arise where such detection is of practical and even medicolegal importance, as has been exemplified in India, where the criminal use of cobra venom is not unknown."

When the evidence of poisoning has been shown, the prosecution should endeavor to establish the absence of the poison found: 1, on the instruments; 2, the dressings; 3, the hands of the attendants; 4, the clothing, and 5, the skin of the patient. This part of the evidence can be readily gathered if the surgeon in charge is on the alert and acts at once. In all the examinations for bacteria special attention should be paid to the identification of strict anaërobes by animal experimentation as well as by culture methods.

I desire, in conclusion, Mr. President, to express my sincere thanks to Prof. William H. Welch for many, valuable suggestions while working out some of the problems in this lecture, and I also desire to mention the name of Dr. A. B. Herrick, clinical assistant and pathologist to the Barnes Hospital, for material aid in all the recent laboratory experiments which were found necessary. His judgment was at all times valuable, and his unfailing willingness made the preparation of the most important part of the work a genuine pleasure.

Hair on the Face Among Insane Women.—A Paris exchange brings statistics collected among 1,000 women in the insane asylums and the same number in the general hospitals. An excessive growth of hair on the upper lip was noted in 497 insane women out of the 1,000, while only 290 were found in the 1,000 in the general hospitals. It was noticed that the latter very frequently had a personal or family record of neuropathy or mental degeneration. Among the insane women the proportions were 64 per cent. of the cases of senile dementia; 56.6 per cent. of those with general paralysis; 42.1 per cent. of those with dementia precox; 38.8 per cent. of the idiots and imbeciles; 37 per cent. of the epileptics, and 47.8 per cent. of those with various other mental affections.

TRANSPLANTATION OF OMENTUM IN THE OPERATIVE TREATMENT OF INTESTINAL DEFECTS; A CLINICAL AND EXPERIMENTAL CONTRIBUTION.*

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The omentum plays a great rôle in the reparative process following traumatic injuries of the abdominal cavity, both in the destruction of microbes and protection of the general peritoneal cavity by reason of adhesions with intestines and the parietal peritoneum. It has even spontaneously closed up small perforations of the stomach and intestines and thus saved lives without surgical intervention. That the omentum has some property in conveying immunity to the general peritoneal cavity has been shown by the interesting experiments of Roger. He demonstrated that the omentum is a lymphatic ganglion. In rabbits and guinea-pigs, he removed the entire omentum and then injected pus organisms into the abdomen. All the animals died in a few days, while those in which the omentum remained survived, although inoculated with the same microbes. Since Nicholas Senn proved by his experimental work the adaptability of omental transplantation, as well as omental grafting over the line of intestinal suture, thereby securing greater security against a subsequent perforative peritonitis, surgeons have, to a great extent, made it a routine practice to transplant omentum when available in such work.

While omental transplantation is a recognized operation as a reinforcement to intestinal suture, I was impressed with the possibility of the use of omentum for directly covering an intestinal defect. Such a pathologic condition following a duodenal ulcer, intestinal tuberculosis, gangrenous cecum, the result of an appendicitis, where enterorrhaphy could not be resorted to, by reason of the unreliability of surrounding tissues in withstanding tension. Also where suturing would cause too great narrowing of the intestinal lumen; or where the condition of the patient or extensive adhesions would not permit an enterectomy.

The omentum has been transplanted over perforations in the stomach, both in experimental work and in man.

William Bennett, in 1896, in a case of perforating ulcer of the stomach, one-half inch in its longest diameter, covered the perforation with an omental plug, as he termed it; that is, he sutured omentum into the perforation the same as a cork fits in a bottle, after all attempts at direct closure failed. The patient made a good recovery.

H. Braun, in 1897, successfully used the great omentum in closing a perforative ulcer of the stomach in a case where the use of the suture was out of the question.

A. Tietze made a number of experiments demonstrating the advantages of omentum for reinforcement of suture. He also made experiments on two dogs, proving the possibility of directly grafting omentum over a defect in the stomach. The dogs were denied food for twelve hours before operation. He made an opening in the anterior wall of the stomach the size of a five mark piece and sutured omentum in three layers over the defect. The animals were placed on a liquid diet for one week after operation. Both dogs recovered from the operation and were killed two months later. There

was great shrinkage of the omentum, the stomach walls being almost in contact, being separated only about two or three millimeters. Microscopic examination showed epithelization of the omentum on its internal surface, and the formation of the glandular elements well developed.

Enderlen experimented on cats and dogs. He incised a portion of the stomach and closed the opening with omentum. The latter gradually assumed the characteristics of gastric mucous membrane. It was found that glands developed in the transplanted portion of the omentum.

Reering performed operations on five dogs, grafting a portion of the colon into a defect of the stomach. The transposed portion of the colon became digested, but three of the dogs lived, due to spontaneous transplantation of the omentum. In other experiments, where the transplanted flap had a pedicle for nutrition, all the animals recovered. The following case is a clinical demonstration of the value of omental transplantation over an intestinal defect:

Mr. F. H., age 58, married; mother living; father dead. Previous good health. His present illness began on July 4, 1902, with a sudden pain in the abdomen. Mustard plaster applied and pain disappeared in the course of three days. Recurrence of diffuse pain in abdomen August 25, which became localized in the right iliac fossa.

Patient admitted into the Passavant Hospital August 29. Temperature 100.8; pulse 102. Operation Aug. 30, 1902. Abdomen slightly tympanitic. Great rigidity of the abdominal muscles. Percussion revealed a circumscribed area of dullness in the right iliac fossa.

Incision made over the area of dullness directly through the muscular structures; the muscle splitting operation not being deemed advisable, as a suppurative appendicitis was diagnosed. On opening the peritoneal cavity there was an escape of a considerable amount of pus. The general peritoneal cavity was packed off with gauze pads and search was made for the appendix. The longitudinal white band of the colon was found and traced in a downward direction to a hard mass situated deeply in the iliac fossa. After breaking up surrounding adhesions the appendix was liberated. On examination it was found gangrenous, with a perforation near its extremity. The cecum was of a grayish-black color. The assistant, on making slight traction on the appendix during the act of ligation, tore the appendix from the cecum, thus leaving a large ragged hole. The necrotic condition of the cecum prevented all efforts in closing the perforation being successful. A portion of omentum was stitched over the opening with interrupted catgut sutures. The abscess cavity was carefully sponged out and gauze and tubular drainage inserted. The external wound was closed in the usual manner.

The following day the temperature arose to 103, pulse 140. Bowels moved with a turpentine enema. The temperature dropped in the course of a few days. Drainage removed five days after operation. There was considerable discharge of pus, which required daily irrigation. The drainage wound healed by granulation. At no time was there escape of feces or pus with a fecal odor. The patient was discharged from the hospital Oct. 17, 1902.

This case illustrates one of the many instances where a fecal fistula is so often the result of a gangrenous appendicitis. Although fistulae are prone to heal in a short time, a great many lives are made miserable by the permanency of this complication.

Having secured such a favorable result in a case where an intestinal fistula appeared inevitable by the usual surgical treatment, I concluded to resort to animal experimentation in order to investigate the possibilities of omental transplantation. The following experiments are placed in two series:

* Read before the Chicago Surgical Society.

SERIES A.

Experiment 1.—Black terrier, ten pounds weight. Incision made in right iliac fossa. Colon found ingested with a hard substance. Opening made in the colon size of a dime. Extravasation of feces, which was carefully sponged away. Omentum placed over wound and united to intestine with one row of continuous Lembert sutures of silk. The line of suture was one-quarter of an inch from the cut mucous membrane of the intestine.

Experiment 2.—Water spaniel, seven pounds weight. Median incision. Colon filled with fecal material. Opening made in colon size of a nickel, over which the omentum was sutured with one row of continuous Lembert sutures.

Experiment 3.—Black dog, seven pounds weight. Median incision. Opening the size of a nickel made in a loop of small intestine. Extravasation of fluid feces containing bile. Omental transplantation made with a double row of continuous Lembert sutures. Dog collapsed from anesthetic and prolonged artificial respiration was twice required. Dog in bad condition when taken off the table.

The results were uniformly fatal, the dogs in Experiments 1 and 3 dying during the night following the operation, while the dog in Experiment 2 lived only until the following day. Death was due to perforative peritonitis. Thinking that the mortality was due to inefficient suturing, I concluded to do another series of experiments with the continuous Czerny-Lembert suture; also to exercise more care in the technic and prevent extravasation of intestinal contents during suturing by tying off the proximal and distal side of the wounded intestine with strips of gauze.

SERIES B.

Experiment 1.—Dog, weight ten pounds. Median incision. Segment of small intestine seized and fecal contents stripped along the lumen on the distal side. Mesentery perforated with hemostatic forceps in two places. Gauze tapes were introduced and the intestine tied. A portion of omentum was puckered with a mattress suture of catgut to make it a more compact mass. An incision was next made in the intestine the size of a nickel. The omentum was now sutured to the serous surface of the bowel on the posterior side of the perforation, with a continuous Lembert suture. A continuous Czerny suture was next inserted all around, uniting the mucous membrane of the intestine to the omentum, thereby closing the lumen. The Lembert suture was now continued on the anterior surface, completing the operation. The technic corresponds to that of a lateral anastomosis. The temporary constriction of the intestine was removed, the abdominal cavity sponged, and the external wound closed.

Experiment 2.—Dog, weight nine pounds. Median incision. Opening in the small intestine the size of a nickel. Operation same as in Experiment 1.

Experiment 3.—Small dog. Median incision. Opening in the small intestine the size of a nickel. Technic same as in the previous two experiments.

Dogs 1 and 3 died the same day. Dog 2 lived fifteen hours. Death was caused by a perforative peritonitis, as in Series A.

The experiments were done under the most favorable circumstances, as regards the surroundings for doing aseptic work. However, no pretense was made to clear out the intestinal tract by restricted feeding before operation, as was done in the series of experiments performed by Tietze.

The unfavorable results of the foregoing experiments are no criterion of the future value of omental transplantation.

The omentum in the dog is thinner than in man, and the adipose tissue is not as abundant nor as vascular; therefore, not as favorable for plastic work. The stomach is apparently the most favorable portion of the ali-

mentary tract for omental transplantation. By reason of its fixed position, the gastric movements do not place as much tension on the transplanted omentum as is the case with the peristaltic wave of the intestines. The great omentum in this region is also found near its attachment; which may also be a favorable factor. The experimental and clinical evidence, although scanty, is abundant proof of this fact. The cecum is the most favorable portion of the intestinal tract by reason of its slight mobility. It lies in one of the regions most frequently attacked by pathologic processes, and the future will demonstrate the adaptability of omentum for defects which can not be closed by suture. Resection of the cecum or a lateral anastomosis are formidable operations as compared with omental transplantation. Primary transplantation of the omentum in gangrenous appendicitis will greatly obviate fecal fistula, which so often follows the operation.

Until more clinical evidence accumulates, showing that reliable suturing can be done, intestinal transplantation of omentum should not be resorted to unless there is abundant drainage down to the seat of suture, besides walling off the general peritoneal cavity.

I intended to perform a series of experiments making omental transplantation with abdominal gauze drainage, but found it was impossible to do such work humanely, as the dogs would gnaw away such dressings unless they were restrained in a cruel manner.

In operations on the small intestine, the latter should be anchored to the abdominal wall, thereby preventing the peristaltic wave making traction on the line of suture before adhesions have formed. The rapid, violent peritonitis, with the subsequent postmortem findings, showed that this was the cause of death in my six experiments.

The microscopic sections of specimens examined by Tietze and Reering showed that omentum transplanted over stomach wounds would act as structure, over which epidermization would take place from the contiguous mucous membrane. There was also development of glandular elements. In the course of time cicatrization of the mesoblastic omentum diminished the area of the defect to a great extent. Unfortunately, I could not secure a specimen for microscopic demonstration, but believe the same reparative process takes place in the intestine as in the stomach.

CONCLUSIONS.

1. Transplantation of omentum over defects in the stomach is an established operation.
2. Transplantation of omentum over intestinal defects is recommended, but is still in the developmental stage.
3. Transplantation of omentum over defects in the cecum is the most favorable portion of the intestinal tract.
4. Transplantation of omentum over defects in the small intestine should only be done after fixation of the segment of intestine to the abdominal wall.
5. Gauze drainage should be resorted to, excluding the general peritoneal cavity.

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A zealous sanitarian says that for every case of typhoid fever some one should be hanged.

FIBROSIS OF THE LARYNX AND TRACHEA.

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A fairly extensive search through modern literature has given the writer the impression that the sclerotic type of chronic laryngo-trachitis has received very meager attention, and that most text-book sections on the subject are decidedly hazy in tone. It may be simply said that the condition has long been known to laryngologists under various names, but has been much confused with wholly separate pathologic states, and has but rarely been definitely described. A review of the literature of the subject does not therefore seem specially desirable.

ETIOLOGY.

Laryngo-tracheal fibrosis may be regarded as the final stage of every case of progressive chronic inflammation of this region—but the element of progression is fortunately absent in the great majority of examples. We know practically nothing of the etiology of sclerosis in this, or indeed in any other region of the body. While the causes of ordinary chronic inflammation may be fairly well established, the rapid, steady and inevitable progression of fibroid changes in typical examples of sclerosis is as yet totally unexplained. Its causes originate far back in the molecular life of the individual, and are at present absolutely unknown.

PATHOLOGY.

The pathology of the disease is that of fibroid degeneration of tissues in general; the slow migration of leucocytes, their aggregation and subsequent fibrillation into new connective tissue, the atrophic changes due to pressure which necessarily follow. The movable structures of the larynx are thus rendered more or less stiff, the muscles incapable of performing their work and the characteristic voice is the result. The epithelium lining the larynx becomes squamous and stratified not only on the vocal cords where it normally exists, but on the surfaces which in health are covered with cylindrical cells. This is the dermoid metamorphosis of Foerster, and is characteristic of long-continued inflammation of mucous membranes generally. The close adherence of mucus to the surfaces during life, and the extreme difficulty experienced by the patient in clearing the throat, are, of course, fully explained by these changes. Proliferation of the epithelia may be so pronounced that marked papilla are formed, and these inflammatory papillomata, which usually appear late in the history of chronic laryngitis, are the small laryngeal warts which come on in middle life. This is also the pathogenesis of the pachydermia laryngis, of which so much has been written; the proliferated squamous epithelium being piled up in plates and nodes on the fibrosed submucous tissue.

SYMPTOMS.

The clinical history of the disease is that of long-continued pharyngo-tracheal annoyance, consisting in the early stages of the usual symptoms of ordinary acute, subacute and chronic inflammation in the upper respiratory tract. As fibrosis becomes well established a different train of symptoms begin. Most characteristic is vocal weakness, pure and simple, not due to the presence of mucus or to local swelling, or erosion of cords, but to pure inability to use the larynx in a normal manner for longer than a few minutes at a time. The voice is thin and weak, but not at first hoarse; speaking is soon troublesome or painful, annoying cough appears,

and rest is demanded. This laryngeal incapacity is undoubtedly due to the general stiffening of the whole larynx, and direct interference with muscular action by the pressure of new-formed fibrous tissue. Slight cough with purely mucous, rarely purulent expectoration, is a constant symptom in laryngo-tracheal sclerosis; it is most marked on waking in the morning, and in early cases may not again appear during the day. Vague but often very annoying, painful sensations about the larynx and trachea are quite constant. They range from mere paresthesia, described as dryness, stiffness, tickling, etc., to a constant sense of weight and pain. Extreme vulnerability to acute inflammatory attacks is one of the commonest signs of sclerotic laryngitis, and is the usual cause of the patient seeking relief. It seems to be present in all cases, and is so marked at times as to practically invalid the subject. Chronic bronchitis is present in about 20 per cent. of the cases and where it exists cough and expectoration are usually distressing features. Spasmodic asthma is found to some extent in about 10 per cent. of all cases, and fibrosis is more rapid in these than in other subjects. Sclerotic changes may begin in the larynx at any age, but are rare in the young; patients applying for relief are usually in middle life.

DIAGNOSIS.

Direct examination by inspection under modern conditions is the most instructive in this as in other laryngeal diseases. The nasal cavities and pharynx will show more or less fibrosis, generally very marked about the lateral pharyngeal walls. In the laryngoscopic mirror the picture is characteristic, the whole region appears much larger than usual, the larynx capacious and especially easy of examination; the region of the arytenoids and folds are narrowed and thinner than normal, and prominent varicose vessels are often present. The condition of the mucous membrane varies if epithelial changes have been marked, crusting and erosion of the membrane are prominent, but this is less common than the purely interstitial form and the epithelial surface may be but little changed. Any amount of papillation, bosselation or epithelial aggregation may exist, giving the appearances described as pachydermia, the region between the arytenoids is especially apt to show minute papillomata. Very rarely the epithelia may break down over a limited area, giving very shallow erosions or ulcers, but these are by no means characteristic. The trachea is usually very easy of examination by the mirror, and shows widening, yellowish coloration, and often striation, from the characteristic changes. No other throat conditions present appearances in the least similar. The active inflammation and hyperemia of ordinary chronic laryngitis are absent, and the "graying," swollen arytenoids and ulceration of tubercular laryngeal disease are conspicuously absent. The deep red color islets of intense congestion of chronic lithemic laryngitis are not present after fibrosis has well advanced. Auscultation of the trachea and bronchi may show harsh breathing and coarse râles, and cog-wheel respiration is very common.

TREATMENT.

As to the treatment of fibrosis of the larynx and trachea, if any curative measures have been employed the inventors have kept the information to themselves, and the prognosis is always unfavorable as to cure in the present state of our knowledge. Palliation of the symptoms, possibly arrest of the pathologic process, is all that can possibly be secured. New tissue elements

can not, of course, be formed, and therefore restoration of function is not possible. As in sclerosis elsewhere the problem is to prevent further migration of leucocytes and to secure the maximum of efficiency from the remaining normal tissue.

Local applications in the form of sprays or vapors are certainly of benefit; medicines which act as mucous membrane stimulants, but not as irritants, are most efficient. Chlorotone, many of the volatile oils, carbolic acid and iodine are most useful; mild alkalies, such as sodium benzoate and borate, are efficient in weak solution for dislodging adherent mucus. All mineral astringents, especially silver nitrate, so long lauded in the treatment of chronic laryngitis, are out of place in this disease, and their use in any condition is exceedingly limited in the practice of the writer. The rather old-fashioned and now much-neglected steam atomizer is especially efficient, and is generally the only apparatus safe to trust to the hands of patients. Internal medication as far as the laryngo-tracheal disease is concerned is idle toil, not the slightest good ever having resulted from such treatment, used alone, under the writer's observation.

Massage, our most valuable agent when dealing with sclerosis higher up in the air passages, can scarcely be used even in the upper regions of the larynx, but may be cautiously attempted in very tolerant subjects. Faradism is of distinct value, the positive pole against the pharyngeal mucous membrane, and the negative over the sternum or held in the patient's hand, is the usual method of employment. A combination of external massage with faradization is very beneficial, one pole being held by the patient, the other by the surgeon, while with his other hand the latter carefully palpates the whole exterior of the larynx. Exercise of the upper respiratory organs by breathing and vocal exercises often does great good, and the improvement of the whole bodily muscular tone by properly directed general exercise is here, as in other forms of fibrosis, often singularly beneficial. Climatic change is always, if well directed, of use, sometimes arresting the sclerosis for a long period. A high altitude commonly answers best, and these cases are nearly always worse at the seashore.

The writer would urge greater frankness to ourselves as well as to our patients in dealing with these and other incurable cases, but believes that very great comfort, lasting for many years, can be secured in even some of the worst examples of chronic fibrosis of the air passages.

THE PATHOLOGY THAT REMAINS AFTER THE NON-SURGICAL TREATMENT OF PERITONITIS.*

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Faithful followers of the teachings of rational medicine believe that actual disease within the abdomen, as in other parts of the body, always means a pathology, the removal or correction of which is essential to the restoration of normal health; and that the efficiency of any treatment for disease in this region, as elsewhere, should be estimated chiefly by the effect it has in removing or modifying the pathology which produces the symptoms. In the management of peritonitis, where the morbid processes are concealed beneath a rigid or

distended abdomen, there are many temptations to lure us from these teachings; and doubtless at times we all find ourselves reading, discussing, or perhaps practicing treatments which, in the light of the revelations of the modern operating-room, we must know are contrary to sound surgical principles and common sense.

I believe that we are especially prone to fall into these errors in our consideration of the remote dangers and distresses of peritonitis. Absorbed in our efforts to avert the immediate danger from sepsis, we are inclined to forget that the sufferings and deaths from recurrent attacks and adhesions are, in the aggregate, vastly greater than those occurring in primary attacks of acute peritonitis; and that the pathology remaining after the non-surgical treatment of peritonitis is not a myth, but a distinct, definite reality, which is directly responsible for this mortality and misery.

Bedside, laboratory and dead-house studies of this pathology and its causative relation to abdominal symptoms are instructive and interesting; but I believe that our most impressive and convincing lessons are to be learned in the operating-room, and that our perfected treatment of the future will be evolved from the gradually accumulated findings and conclusions of those who have frequent opportunities for observing these morbid processes in life.

The conclusions, briefly stated below and offered for your consideration, have been suggested or confirmed by my own operating-room observations. For the sake of brevity and clearness, these conclusions are compressed into the fewest possible words, free from statistics, case-notes, or quotations from authorities.

Ninety-five per cent. of all the survivors of the non-surgical treatment of peritonitis are left with infection without the peritoneal cavity and adhesions within the peritoneal cavity. Well-known anatomic peculiarities of the gall bladder, appendix, and fallopian tubes favor the reception and imprisonment of infection from the alimentary canal and endometrium and its extension to the peritoneum. Consequently, it is about one of these organs that we usually find the pathology, unless it has been mechanically removed. The greatest amount of infection comes from a sudden rupture of an appendiceal or tubal abscess, or a perforation of the stomach, an intestine, or the gall bladder. The most virulent infection is either appendiceal or from a pyosalpinx, following a puerperal endometritis; the mildest is from a cholangitis, or a gonorrheal salpingitis.

Since the infection of an appendicitis or a pyosalpinx has no outlet through natural channels, and in inflammation of the bile ducts and gall bladder there is usually some drainage through the common duct, we usually find in the first mentioned diseases the local and general symptoms are pronounced and unmistakable, while in the latter (in the absence of gallstone seizures) the symptoms may be very obscure and misleading. When the infection reaches the outer coat of one of these organs, peritoneal adhesions are formed as a part of Nature's defense against the invasion of a microbic foe.

My own experience would lead me to believe that about 40 per cent. of the possessors of this pathology (infection and adhesions) suffer from recurrent attacks of acute and subacute peritonitis, and less than 1 per cent. from mechanical obstruction of the bowels.

It is to the remaining 59 per cent. that I invite your particular attention at this time; for, while it has been customary to point to these cases as sufficient proof of the efficiency of the drug treatment of peritonitis, I believe that all fair-minded, thoughtful observers are learn-

* Read at the twelfth annual meeting of the Western Surgical and Gynecological Association, held at St. Joseph, Mo., December 29 and 30, 1902.

ing to regard the pathology these patients carry within their abdomens as responsible for much distress and many deaths that we all formerly attributed to other causes, or were unable to trace to any well-defined cause.

It is difficult to conceive how this or any other pathology within the abdomen and outside of the alimentary canal can be removed or permanently modified by the application of drugs to the inner coat of the stomach or intestines or to the skin covering the abdomen; and, to my mind, it seems unreasonable to assume that the gall bladder, appendix, or the fallopian tube can continue to harbor infection and the patient be exempt from those general and local symptoms that accompany imprisoned infection in other parts of the body. Among the results that are commonly overlooked or misinterpreted are subacute local inflammations, mild systemic infection, chronic rheumatism affecting the joints, tendon sheaths, and, occasionally, the pleura, endocardium, and pericardium, and metastatic abscesses.

If we should make it a rule in examining every patient who has had peritonitis and apparently recovered without the mechanical removal of the primary cause, to draw a line from the end of the tenth rib on the right side to the umbilicus, and another line from the anterior superior spine of the ilium to the umbilicus, and a third (if the patient is a female) from the middle of the second line to the spine of the pubes (each side), and then apply deep and direct pressure over the center of each of these lines, the existence and situation of a pathology would be, in nearly every instance, demonstrated. Such information would furnish us with an explanation of the symptoms of mild systemic infection, from which such patients often suffer.¹

Just how much and how little general absorption may take place from a low-grade infection of the appendix, gall bladder or fallopian tube is impossible to determine, but that some lives are shortened in this way and many made miserable, is undoubtedly true. When we meet with patients suffering from symptoms that may be due to a mild toxemia of obscure origin, such as febrile and circulatory disturbances, gastro-intestinal disorders, headaches, fugitive pains, malaise, and others equally significant, we should always include in our examination those organs which are most likely to harbor the source of such a systemic infection.

For example, we know that rheumatism is often associated with appendicitis and peritonitis as well as with posterior urethritis; and, of late, we frequently hear of a rheumatic peritonitis or a rheumatic appendicitis, but never of a rheumatic gonorrhea. The fact is that rheumatism is not an uncommon consequence of septic absorption, and must be counted as one of the not infrequent remote results of the non-surgical treatment of peritonitis. It is surely inconsistent to conclude that infection in one part of the genito-urinary tract is a cause of rheumatism, and that in another or even in the gall bladder or appendix, it is the result of uricacidemia.

To perform their physiologic functions perfectly, the stomach and intestines require the greatest mobility their anatomic attachments permit, and any band of adhesion that fixes, binds, or drags on them or that impedes or prevents their free movements always means a departure from health, and is usually attended by more or less distress and danger.

Post-operative adhesions, however firm and strong, are usually absorbed if the primary infection is com-

pletely removed; but no dietetic measures, drug treatment or rest cure will prevent the formation of adhesions or materially influence the absorption of those already formed, so long as the original infection is retained. In other words, the presence or absence of infection determines whether existing adhesions shall be absorbed or strengthened and multiplied. In operative work, the presence of adhesions about the gall bladder, appendix or fallopian tube is more reliable and tangible evidence of existing infection than any available microscopic or bacteriologic proof.

Guided alone by our observations during operations, I think that we may assume that either in the right upper quadrant or in one of the two lower quadrants of the abdomen, adhesions remain and produce symptoms more or less grave, in nine-tenths of all the cases after the non-surgical treatment of peritonitis. This pathology produces symptoms so variable in intensity and so misleading in character that unless one is impressed with its frequent occurrence and bears well in mind the anatomic relations and physiologic functions of the near-by organs, he is almost certain to attribute the symptoms to other and wrong causes.

Gastric symptoms are rarely absent, since the omentum is almost invariably involved in a way to drag on the stomach. Constriction about the pylorus with dilation of the stomach is not an infrequent result of gall-bladder adhesions with a long list of gastric and reflex symptoms. In the majority of these cases, the true condition is not suspected, or, at least, demonstrated, since, unless life is in jeopardy, one does not often feel justified in opening the abdomen except the diagnosis be quite clear. Within the past few years, however, in a number of cases where the symptoms have been especially striking, the true diagnosis has been made, and the patient relieved by surgical measures. I have recently operated four times with satisfactory results, where the symptoms, produced by adhesions, pointed strongly to cancer or ulcer of the stomach.

Partial occlusion of the colon with or without a connecting sinus may occur when the gall bladder becomes attached to the hepatic curvature of the colon.² Bands from diseased uterine appendages may encircle or angulate the ileum, when perhaps no history of recent pelvic disease exists to guide one. Involvement of the cecum and ileum are common after appendicitis and right pyosalpinx; while the sigmoid is nearly always implicated when the primary peritonitis has arisen from a left pyosalpinx.

It can not have escaped the observation of operators that ulcers of the stomach and intestines occur almost invariably in those parts that are most dependent or in those that are dragged on by adhesions. Doubtless long-continued functional inactivity detracts from the vitality of the part and favors degenerative changes. It is equally true that the preferred site of malignant disease is about the former situation of an inflammatory process. Just as the cracked lip, the fissured nipple and the lacerated cervix seem essential to the development of cancer in those parts, so the selected regions for inflammation in the abdominal cavity seem to mark the favored sites of malignant disease, as the pylorus, duodenum, rectum, sigmoid, cecum, hepatic curvature, etc. If these facts be as true as operative experience would seem to indicate, we must count the pathology that remains after the non-surgical treatment of peritonitis as a

1. I reported one such case in the *March Annals of Surgery*, where the infection came from a gall bladder filled with gallstones so situated as not to produce any characteristic paroxysms of pain.

2. One case of my own of this kind was reported in the *March Annals of Surgery*.

strong predisposing cause of ulcer and cancer, and in estimating the advantages and disadvantages of either method of treatment, due weight should be given these facts.

As in my recent work, I have compared the opinions formed at the bedside with the actual conditions disclosed on the operating table. It has seemed to me that we are only just beginning to comprehend the remote results that may follow the non-surgical treatment of peritonitis and that no itemized list of symptoms produced by this infection and these adhesions will serve to give us an adequate idea of this pathology and its ill consequences; but that our clearest conception must come from a realizing sense of its relative frequency, as compared with other morbid conditions within the abdomen, the history of one or more attacks of peritonitis, the results of palpation, and the exclusion of other causative factors, combined with our familiarity with the anatomy and physiology of the parts involved.

Beyond the reach of drugs, electricity, massage, or dietetic measures, more common than cancer and ulcer combined, often mistaken for either, a predisposing cause of both, capable of producing any abdominal symptom or set of symptoms in the category from those of the mildest functional disturbance to those of well-advanced malignant disease, surely we have here a pathology that needs to be taken into the strictest account not only by surgeons who undertake the rational treatment of acute peritonitis, and are often called on to decide for or against operative interference, but by all of us when we are striving to search out the primary causative factors and associated symptoms of any obscure chronic disease or distress within the abdomen.

THE USE OF A MYDRIATIC AFTER THE AGE OF FORTY-FIVE.*

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In discussing this topic it will be well to keep in mind the distinction between mydriatics and cycloplegics, remembering that the former, in so far as they are mydriatics only, dilate the pupil without affecting the ciliary muscle, and that the effect desired in the latter is to suspend the action of the ciliary muscle and so paralyze the accommodation. While there is no known cycloplegic which does not at the same time dilate the pupil, there are mydriatics which have but little effect on the accommodation.

It is probable that our committee, in arranging the subjects for special discussion at this time, had more particular reference to the use of a cycloplegic in refraction work after the age of 45, but the writer has had no intimation that this is the case, and the topic will receive a somewhat broader treatment. While the main discussion will center about such use of cycloplegics, the use of both mydriatics and cycloplegics for various purposes after middle life will be briefly considered.

THE USE OF A MYDRIATIC.

a For ophthalmoscopy and *b* for retinoscopy.

a Concerning the use of a mydriatic for making more thorough examination of the peripheral portions of the lens, the other media and the fundus there is perhaps no difference of opinion. We all probably use a mydriatic for this purpose at any age without the slightest

hesitation, unless we find symptoms of glaucoma present. In the latter case even we may consider the additional information gained of sufficient importance to warrant the use of a mydriatic for a sufficient time to make an examination and then follow it with a myotic, which shall counteract any unpleasant effect that might follow dilatation of the pupil.

b The same rule of action probably governs the use of mydriatics in making the shadow test to determine the refraction. This is, in the writer's judgment, by far the most valuable objective test for refraction at our command, and yet in many cases, particularly in old people in whom the pupil is apt to be small, its accurate application without artificial mydriasis is impossible. In such cases, with the precautions mentioned above, a mydriatic is indicated.

NECESSITY OF A CYCLOPLEGIC IN CERTAIN CASES BEYOND THE AGE OF 45 FOR ACCURATE REFRACTION.

On this point one would expect to find differences of opinion, as there are differences of opinion concerning the necessity of using a cycloplegic for refraction work at any age. To test their theory and practice in this regard the writer sent one hundred letters of inquiry to prominent ophthalmologists throughout the country. The number and promptness of the replies and the interest shown in the subject are most gratifying.* To those who so kindly contributed to this paper the writer wishes at this time to express his sincere thanks.

The writer has for many years believed that better and more accurate refraction work can be done for most patients under 30 by putting the accommodation entirely at rest at some time during the examination, and it is his practice to urge this procedure in all but the most simple cases. Beyond the age of 30, the proportion for whom a cycloplegic is required rapidly diminishes, and by the time 45 is reached such cases are exceptional, and yet in the exceptional cases the indication is as positive for cycloplegia as in those of any age. Since the suspension of accommodation in the aged is due to hardening of the lens and not to paralysis of the ciliary muscle, it is difficult to fix a time beyond which a cycloplegic could never be of advantage. We occasionally find the ciliary muscles of eyes that have lost practically all accommodation still tugging away in an effort to correct an annoying astigmatism, and the suspension of the function of these muscles will sometimes disclose conditions not otherwise discoverable.

The writer did not suppose that a cycloplegic is used in more than 1 or 2 per cent. of his refraction cases after the age of 45, but on running back over his records he finds that of 194 such cases seen in private practice in the past two years a mydriatic was used in 38 cases and a cycloplegic in 14. Of the latter scopolamin was the cycloplegic employed in 9 cases, none over 50 years old, while homatropin and cocain were used in 5 cases, one of which was 55. Homatropin and cocain were used in one patient aged 50, and as the accommodation was not entirely suspended scopolamin was employed later. That there are such cases that can not be as well corrected with all available tests without cycloplegia he is fully assured. It is possible that if patients could be seen and studied repeatedly that proper correction might

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

* Since we all like to have others think as we do, it is an additional source of gratification to know that the practice of so large a proportion of those replying coincides as closely as it does with that of the writer. The abstract of this paper [in the program of the Saratoga meeting] was sent to the Editor of THE JOURNAL before those answers were received, but a very large proportion of them show a practice almost identical with that outlined in that abstract.

in all cases be ultimately given. But a large proportion of the writer's patients come from a distance, observation is only possible for a day or two, and the patient can not return in a few weeks for change if the first lenses are not satisfactory. Hence it is necessary that he should learn all that he can about the eyes at once, and this can not be done in these exceptional cases without cycloplegia.

INDICATIONS FOR CYCLOPLEGIA.

The indications for cycloplegia in these older patients are asthenopia, inability to secure as good vision as the condition of the eye would seem to warrant, lack of agreement between the results obtained by the test lenses, the ophthalmometer and the shadow test and general uncertainty of tests for astigmatism and hyperopia. It has seemed as if cycloplegia were more apt to be required in anisometropia than in other cases, and also in very nervous patients.

THE USE OF A CYCLOPLEGIC IN PATHOLOGIC CONDITIONS.

There are other cases where doubt as to the desirability of using a cycloplegic is put at rest by the condition of the fundus, when, as has been so well shown by Dr. Risley, the eyes are irritable, the choroid and retina showing slight changes and the edges of the discs blurred, the accommodation should be put completely at rest, not only for a most careful study of the refraction, but also for the good effect that this rest will have on the general condition and nutrition of the eye. In some of these cases seen long ago, where cycloplegia had been used as a therapeutic rather than as a diagnostic measure, such a difference was found between the apparent and the real refraction as to demonstrate conclusively to the writer that the suspension of accommodation is sometimes necessary for accurate refraction work after the age of 45.

Of the necessity for a cycloplegic in cases of iritis and similar inflammatory diseases even after 45, there is no question, and yet many of these cases are among the most perplexing that come before us. Given the symptoms of a moderate iritis in an elderly person, the eye having shallow anterior chamber and rather high tension, one is under the greatest anxiety as to what it is best to do at first. The writer's practice in such cases is to instill a weak mydriatic and if the pupil responds readily and is round he concludes that iritis is probably not present, and so at once uses eserine. If this is followed by relief of the symptoms present the myotic is continued; otherwise homatropin or scopolamin may be used and the effect closely watched.

A word as to the drug habitually used by the writer and his associates in inflammatory conditions requiring a cycloplegic in elderly people. Some six or eight years ago we commenced to employ scopolamin solution in some of these cases because of its supposed freedom from danger. While it is uncertain that there is less danger of increasing tension with scopolamin than with other active cycloplegics, it has been found to produce less irritation and so is used in preference to atropin in most cases in elderly people, and in many cases of traumatism, of ulceration of the cornea and of kerato-iritis even in the young.

THE DANGER OF INCREASING THE TENSION OF THE EYE BY THE USE OF CYCLOPLEGICS.

That the use of a cycloplegic in a perfectly healthy eye has ever induced glaucoma has long been considered very unlikely by the writer. But that such use will induce in a mild, chronic glaucoma a severely acute attack, or that even a weak mydriatic will increase tension

in an eye tending to glaucoma he has not the slightest doubt. The writer has not been so unfortunate as to have had a case of acute glaucoma follow the use of a mydriatic or cycloplegic at his hands, and the only case of increased tension recalled is one that he has had under observation for the past sixteen months, a case of chronic glaucoma where the tension was marked $+?$ at the first examination, where the anterior chamber was rather shallow and where the pupil was so small that no adequate study of the interior of the eye could be made. In this case it was deemed advisable to instill a weak mydriatic that the internal conditions might be studied. Such instillation, while not causing unusual dilatation of the pupil, was followed at once by decided increase in tension, which increase was very hard to reduce by eserine and pilocarpin. There had been no pain in the eye before, nor has there been any since. The tension has tended toward $+1$ most of the time since, though fairly controlled by eserine, and the sight has gradually failed. Operative interference has been steadily refused. The writer has always exercised and taught others to exercise the greatest care in regard to the tension of the eye even in the young when cycloplegia is necessary either for diagnosis or treatment.

CURRENT LITERATURE.

Reference to current text-books shows remarkably little written about the advantages of the use of mydriatics or cycloplegics in those over 45 years old, and relatively little on the dangers of such use. Below is given either in full or in abstract all the references found in a somewhat careful search.

1. FOCUS, in his text-book, page 372, says mydriatics can excite an inflammatory attack in eyes already predisposed to it, and that not only the powerful mydriatics, like atropin, but also homatropin, and even cocaine. On page 387, he says mydriatics are as prejudicial in glaucoma as the myotics are useful. On page 281, he also refers to the intolerance to atropin observed in many persons. It may manifest itself by 1, the development of toxic symptoms, such as dryness in throat, nausea, etc.; 2, by the production of so-called atropin catarrh; 3, by marked swelling and redness of eyelids, resembling erysipelas, even from minute doses in some cases.

2. CLARKE says positively mydriatics should not be used in acute glaucoma. He refers especially to the frequent confusion of glaucoma and iritis, remarking that many a glaucoma which might have been cured in its early stages had it been recognized, is treated with atropin and the eye irretrievably lost. He gives a table of the differential signs between glaucoma and iritis. In glaucoma with secondary iritis we do not see the acute form, he says, and atropin will probably do little, if any, harm, as the pupil will probably not dilate because of adhesions. In such cases use homatropin carefully. If it is necessary to dilate the pupil in elderly persons in order to make a more thorough examination of the lens, etc., it is wisest not to use atropin. Homatropin will answer the purpose just as well and is much safer.

3. SWANZY: The only reference to action of mydriatics in old persons in Swanzy's recent text-book is on page 340, where he says that atropin and all mydriatics bring on glaucoma when there is already a tendency to it.

4. CHAS. H. MAY, speaking of mydriatics and cycloplegics, says (page 328), that a cycloplegic is indicated in the estimation of the refraction in all cases of children and young adults, in many cases between the ages of 35 and 45, and occasionally between 45 and 50, when the previous determination of the refraction without paralysis of accommodation has been unsatisfactory. Before using these agents in elderly persons any suspicion of glaucoma must be excluded.

5. NETTLESHIP says (page 299), atropin has sometimes caused an attack of glaucoma, because, by lessening the width it increases the thickness of the iris and so crowds it into the angle of the anterior chamber.

6. CHAMBERS WATSON says (page 101), mydriatics are contraindicated where there is the least tendency to increased tension. This must be particularly attended to, especially in elderly subjects. In a second place (page 897) he states that they are contraindicated in inflammation accompanied by glutinous secretion. In such cases atropin does not act well.

7. SNAELLEN (in NOBLE & Oliver's System, Vol II, page 36), says of atropin, that, in normal eyes, it hardly if ever affects intraocular tension. In glaucomatous ones it may produce an attack of glaucoma. Great care, therefore, should be taken not to employ atropin too freely in eyes that are predisposed to glaucoma, as in old people with shallow anterior chambers.

8. GEO M GOULD, in an article on "The Ophthalmoscope and the Art of Ophthalmoscopy," in NOBLE & Oliver's System, page 79, says that after the eyes have been examined by other simple methods we have to decide whether or not we shall use a mydriatic before proceeding with the examination by use of instruments. This decision will be governed by many considerations. In patients over 50 years of age we really do not need to use a mydriatic in order to diagnose the existing errors of refraction, and in such cases, therefore, we shall rarely need to widen the pupil for purposes of ophthalmoscopy.

9. PRILSILA SMITH, in his article on glaucoma in the same system (Vol III, page 672), remarks that atropin is harmful precisely in those conditions in which eserine is useful; it induces high tension by dilating the pupil, slackening and throwing the iris into folds and thereby helping to obstruct the filtration angle. The choice between a myotic and a mydriatic is not always easy to be made, one or the other must be employed tentatively, reexamining the eye at intervals.

10. E JACKSON (article on "Methods of Determining the Refraction of the Eye") says, page 210, that as cocaine possesses little or no power to paralyze the ciliary muscle, it may be useful to dilate the pupil in persons over 50 years of age, whose pupils are small and whose power of accommodation is not sufficient to interfere with tests for refraction.

11. TERPILER. There are cases to be met with in practice where it is clear that atropin is absolutely contraindicated on account of the fact that this mydriatic tends to raise ocular tension. Notwithstanding the experiments of Pfleger, Wagner, Adamuck and Grunhagen have shown that on animals of the normal eye this does not hold, nevertheless clinical experience teaches that unfortunate results follow the use in inflamed and glaucomatous eyes. Wherefore, we have to be extremely cautious in its use always for fear of stumbling on such a case. Atropin is to be interdicted in glaucoma of all forms. If in doubt, it is better not to use atropin, or at most to use cocaine, which, while dilating the pupil will not have regrettable result of increasing tension and inducing a subacute attack of glaucoma.

In old persons, also, in whom the sclerotic has become very rigid, the use of mydriatics will have the same tendency to provoke glaucomatous complications, we should, in such cases, abstain from use of atropin, especially when we have to do with a hypermetropic eye—this being the kind particularly exposed to this danger.

As to the employment of atropin for ophthalmoscopic examination, our author remarks that in certain persons, especially in aged subjects, it is very difficult, sometimes, on account of the small punctiform pupil, to see all the details of the fundus without their use. The use of atropin in such cases is common, but it is a bad practice. In all such cases if a mydriatic must be used it should be cocaine.

12. PLITZER lays stress on the dangerous effects of atropin in producing glaucoma. It causes the condition, he thinks, by its influence on nutrition or on the blood supply of the eye, producing a venous stasis and augmentation of intraocular tension, and not by constituting a simple obstacle to the filtration of liquid, as some hold.

13. KALB says the physician must never forget that in prescribing atropin he is making use of a drug not without its dangers. In old persons great care must be taken not to confuse nitis and glaucoma, and it must be remembered that

glaucomatous symptoms sometimes supervene in the course of an ordinary nitis.

14. SAKIMIL reports a case (age not stated) in which glaucoma of both eyes was produced evidently from misuse of atropia instillation, and remarks that indiscriminate use of atropin is dangerous, for it must be remembered that glaucoma may occur at almost any age after puberty and following injury even younger. He had once a case of glaucoma in a boy of 9.

15. GRIMSDALE reports two cases of glaucoma following instillation of atropin which he thinks are interesting for the reason that the increase of tension did not come on while the atropin was being instilled, but at a period of considerable number of days after the drug had been discontinued, when in fact the physiologic effects must have been passing off. Grimsdale could find no other such reports in history, but thinks they are common, as his two cases occurred within nine months. This may explain his cases. Excretory channels were contracted under atropin, on stopping its use the ciliary glands resumed their normal output and the efferent channels were no longer sufficient.

16. H KNAPP reports a case in which two drops of 75 per cent solution of hydrochloric of euphthalmum brought on a more immediate and pronounced attack of glaucoma than the author had ever seen follow the instillation of any other mydriatic. The patient was a man aged 62, left eye blind from absolute glaucoma; right V=20/40 with +1C at horizon 20/20, pupil, field of vision and tension normal, noticed diminution of sight recently in R, and pain in L eye, lately had seen blue rings around lights, found anterior chamber of right eye shallow. Used 2 minims of solution mentioned in each eye. During next 15 minutes tension increased in both eyes, in right it was +2 fully, cornea stony, eye painful, pupil dilated ad maximum, optic disc distinctly but not completely cupped, and marked halos were seen around light. The glaucomatous symptoms in right eye disappeared in about 30 minutes under the use of 2 per cent solution of pilocarpin, followed by 1 per cent solution of eserine; the left blind eye was also relieved. A few days later he performed glaucoma iridectomy on right eye. Knapp found euphthalmum up to this time generally free from hypertonic action and used it indiscriminately on glaucomatous eyes.

17. J M HILL reported the case of a man (age not stated) who had been injured about the eye by a blow. Physician who had been consulted ordered a solution of atropin grs ii to ʒi, two or three drops in eye three times a day. Maximum dilatation was produced within 30 minutes after first instillation. The drops were kept up for six weeks. At the end of that time examination showed right (injured) eye had fixed pupil, glazed appearance, cloudy aqueous, sensibility of cornea diminished and globe distended and hard, vision diminished to light perception, ophthalmoscope revealed a cupped and white nerve. Vision of other eye good.

18. E J BROWN reported the case of a man aged 61, with asthenopia and nervous symptoms, who had had trouble with eyes since childhood.

VOD 20/200 with -2 50 cyl at hor. =20/20.

VOS 20/50 with -2 cyl at 60 degrees nasal =20/30.

Right hyperphoria 1 degree, esophoria 5 degrees at 13°. exophoria 6 degrees.

Prescribed one drop of solution of atropin, 4 grs. to ounce, morning and evening. When seen three days later no change except a change in axis of right cylinder from horizontal to 60 temporal. After four days he was seen again and complained of colored halos around light, prescribed 2/5 per cent. solution of eserine. Both fields slightly contracted, especially upper and lower quadrants, L more than R. Seen again four days later, pupils still moderately dilated, L cornea less sensitive than right. Arterial pulsation (not venous) on pressure and slight increase of tension in left. Symptoms subsided under use of eserine.

19. COGGIN. Patient, woman aged 68, complained of failing sight for one year. No pain. Pupils and fundus normal. Field of vision good. Instillation of drop of atropin solution (gr. 1/2 to ounce), with improvement in right eye, and patient was advised to use same solution whenever she liked. Four

days later patient had all symptoms of glaucoma in right eye. Iridectomy was declined, 2 per cent. solution of eserine was used and within half hour pupil was well contracted. Four days later eye was quiet, still red. T. +1. V. fingers at 0.75. Pupil irregularly contracted with +1.50=Sn. VI at 4. with O.S. and again since consultation.

20. W. J. CANT: Patient a nervous woman aged 65, who had severe pain in head and right eye, preventing sleep. On examination eye was found to be quite blind and tension greatly increased. T. +3; two iridectomies had already been performed without relief; then excision performed by author. Occasionally slight pain in left eye, with rainbow rings round a light; relieved by solution of eserine.

A few weeks later he found lens opaque, but no glaucomatous symptoms. Iridectomy; corneo-sclerotic. Section was made in upper segment and large piece of iris removed; eye few days after free from irritation.

Eleven days after operation patient, by mistake, used atropin drops, which happened to be in the house, with result of bringing on acute glaucoma. Seen next day, tension increased, sclerotic injected, violent pain in eye and head with constant feeling of sickness. Eserine again was ordered and in a few days all glaucomatous symptoms disappeared.

21. HINSHELWOOD: If we may believe Hinshelwood, who substantiates his opinion by the recital of an interesting case, it is not atropin only that can precipitate an attack of glaucoma. Most of the authors have spoken of cocaine as a safe mydriatic as regards this affection. It was advocated by Groenouw of Breslau, at a meeting of the Ophthalmological Society at Heidelberg in 1897—not as a substitute for iridectomy, but as a useful symptomatic remedy, which combined the mydriatic action of atropin with the tension-reducing action of eserine. In the discussion which followed this paper his views received a certain amount of support.

The patient was a woman aged 50, with six diopters of hypermetropia, very contracted pupils, headaches, neurotic, used 2 per cent. solution of cocaine. The same evening she began to have intense pain in right eye, vomiting, and next day right eye was found to have all symptoms of glaucoma. Author thinks no doubt dilatation of pupil was immediate cause of glaucoma in the eye already predisposed to it.

Holocain is advocated by him as the drug to use in glaucoma; it is an anesthetic which neither elevates tension of globe nor dilates pupil, and is, therefore, especially fitted for treatment of such cases, having all the pain-relieving qualities of cocaine without its dangerous effects.

22. DYER, in "On the Use of Atropia in Diseases of the Eye" (1882), says: "Atropia is not a panacea and can not be used freely in all inflammations of the eye. It is often a decided irritant to the inflamed conjunctiva and should never be used without positive indications."

23. ROBERTSON, in "Sulphate of Atropia and Its Uses in Eye Diseases by the General Practitioner" (1893), quotes Fuchs as saying: "Too much caution can not be inculcated in regard to the senseless employment of atropin, which, unfortunately, is still carried on by many general practitioners, who instill atropin in every kind of eye disease. In many cases, i. e., conjunctival catarrh, atropin is not only superfluous, but also causes the patient annoyance through disturbance of vision, connected with its use; and in eyes which have a tendency to glaucoma, atropin may actually inflict a great injury by determining an attack of acute glaucoma. Accordingly, atropin should be employed on quite specific indications, should be applied no oftener than is requisite to obtain just the results desired. Even in iritis, atropin is useless if the pupillary margin is adhesive to the capsule throughout, and the iris hence can not retract."

Robertson says: We are hereby warned on such good authority in regard to the senseless employment of this valuable drug, but after sixteen years of daily experience in treatment of eye diseases, we have failed to see the first instance of fatal injury from its use. While on the other hand, all have seen eyes partially or totally deprived of sight by seclusion of the pupil and other inflammatory sequelæ that might have been prevented by the timely use of atropin.

On the head of the general practitioner usually falls the blame when an individual by any chance loses the sight of one or both eyes. The blame is laid on him by the people who claim they consulted the physician and the eyes were allowed to go blind; by the specialists who assert that had the eyes been treated properly blindness would not have occurred.

Inquiry would elicit the fact that the iris is allowed to contract and form adhesions in all parts, when an early dilatation would have resulted in ultimate cure, or in a condition in which an operation might alleviate.

Atropin accomplishes several things. It dilates the pupil, and so prevents adhesions; it paralyzes accommodation; it relieves neuralgic pain, promotes absorption of inflammatory exudate, reduces capillary congestion and frequently cuts short the disease. It may tear loose recent synechia. The writer advises atropin in all injuries involving cornea, iris, sclera, lens capsule, lens, ciliary body and choroid. He sums up his article by stating that too little rather than too much atropin is used; that it is better to err on the side of using it when not needed than vice versa.

(To be continued.)

PRESCRIPTION REPETITION AND ITS DANGERS.

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NEW YORK CITY.

If there is any part in the physician's vocation where ethics and commercialism may conflict it is in the writing, dispensing and renewing of prescriptions. The prescription forms a bridge from the one to the other and, after leaving the office, is apt to remind the writer that pure ethics are good theory but sometimes poor practice. The piece of paper that the patient receives has a positive value; it may be negotiable and bring success or failure. It may be a source of profit to the pharmacist, a fountain of relief and comfort or disaster to the patient, and a means of building up a new reputation or shattering an old one to the physician. It is therefore natural that all three, the physician, the pharmacist and the public, should largely be interested in the prescription, and each one watch over it in his own way.

The question who owns the prescription after it has passed into the hands of the patient is one that has been argued many times, and a satisfactory solution has not yet been found. The physician who writes a prescription does not intend to give his advice forever, or to put on paper some new and finite product of his brain, as, for instance, the architect does when he sells the plan of a house. The prescription is given for one certain case only, and is not intended to apply to any other case. It goes to the pharmacist, who, according to custom, keeps it on file. In some countries it is compulsory for the pharmacist to keep the original for a certain number of years. In the United States the pharmacist generally keeps the prescription, but returns it to the customer, if the latter so desires, and always makes a copy when requested. The pharmacist may therefore be called the guardian of the prescription, but can make no claim to its ownership. The patient, as a rule, believes that the prescription is his property; in his mind it is the thing he paid for, and he claims to have the right of renewal whenever he pleases. To tell the patient that he has no claim of ownership would be resented most decidedly in most cases, and result in the withdrawal of his patronage if enforced. Custom, the most powerful factor in many economic arguments in the United States, certainly is on the side of the patient in this question.

There is a number of judicial decisions on record about the ownership of prescriptions; but far from set-

APRIL 18, 1903.

ting this vexed question to anybody's satisfaction, they rather increase the confusion by their contradictions. In one state the pharmacist was declared to be the owner, in another the physician, in a third the patient. Nor was the train of logic by which the learned judges arrived at these decisions always the same, and in some instances contrary to the arguing of ordinary mortals. In one case the judge decided that the evidence shows that the patient received a piece of paper from the physician, for which he paid a fee. He therefore became the owner of the piece of paper and has the right to do with it whatever he pleases. It would be interesting to hear this judge's decision on the question, "Who owns a prescription that was remitted to a druggist by telephone, the druggist or the telephone company?"

It is the writer's opinion that the physician alone can be called the owner of the prescription, and he is the only one to decide about its renewal or copy.

The query as given by the committee reads "Prescription Repetition and Its Dangers." The word "dangers" is unrestricted, it must therefore be applied to all three parties interested, the physician, the pharmacist and the public. That, under certain conditions, there is much danger for the physician in the indiscriminate renewal of prescriptions needs no argument. As was stated before, the prescription is, as a rule, given for a certain case, the physician not only determines the nature of the medicine, but also the quantity, and an excess can not only interfere with the progress of convalescence, but often cause serious damage. There are a number of drugs in our materia medica whose action will be beneficial if used under certain conditions, but injurious if continued indiscriminately. Every practitioner knows the beneficial influence of digitalis in certain cardiac disorders, but is also aware of the great danger attending its continued use. Nor is this all. Patients sometimes have the same prescription renewed after a long lapse of time, thinking they are ailing from the same trouble as before. And more than that, some of their friends may complain to them and they at once assume the right and ability to diagnose the case, and tell them to get such and such a prescription that their physician gave them, and that worked a wonderful cure.

In the renewing of prescriptions the pharmacist is often accused by the physician to be only too willing to consent to a renewal. Now it may be that some pharmacists are so mercenary that they will do anything for the sake of earning a few cents, but it is also true that the better class of pharmacists is not inclined to renew prescriptions indiscriminately, particularly where they are of a dangerous nature. The pharmacist is, however, between two fires. If he positively refuses to renew a prescription he is sure to lose trade, and he is not always sure that he does the physician a favor by so refusing. The writer, in his long career as pharmacist, has met many a physician that told him distinctly never to renew a prescription without his consent; but nearly without exception the physician would some day come into the pharmacy, asking, "Do you know that you did me great harm by offending Mrs. Blank. She wished the renewal of a prescription, and was much offended by your refusal." "Why, Doctor, but you told me yourself never to renew a prescription without your consent." "Yes," he would say, "but you must use discrimination. This lady is one of my best patients, and it will not do to offend her." It must also be said that in many cases the physician will give a prescription to a patient and state distinctly, "If your trouble returns have this

renewed." It is therefore very unfair to expect a pharmacist to refuse renewal of prescriptions, for as long as the custom for renewal is so prevalent as it is in this country it is impossible to fight against it.

The greatest danger in prescription renewing lies with the patient. Only too often the sick will persuade himself for the sake of saving a physician's fee that his ailment is the same as the one of six months ago, and simply have his old prescription renewed. Or he noticed a temporary relief and foolishly considers this a cure, taking the medicine again and inclining naturally to gradually increased doses. Thus drug habits are formed, and the supposed blessing of the renewal of prescriptions is in reality a hidden curse that slowly but surely undermines his health. How many opium fiends have thus been made, how many cocain victims have thus been created, is beyond possibility of computation; but that much misery has been spread and nourished in this way is without question.

It will thus be seen that but little, if any, benefits can be ascribed to the renewing of prescriptions, but the dangers are manifold to all, the physician, the pharmacist and the patient.

If the renewal of prescriptions is an evil, the remedy alone lies with physicians. They should bring sufficient influence in the legislature to prevent by law the renewal of prescriptions without the prescriber's consent, and the pharmacist would willingly follow. With the refusal to renew should also go the refusal to give a copy, for as long as a copy is given, or the original returned to the patient, he may get the medicine from some other druggist, and accomplish his object in that way. Some physicians would answer that the best remedy lies in self-dispensing and avoid the writing of prescriptions entirely, and let the patient return when he wants more medicine. This argument, however, works both ways. The busy practitioner has no time to prepare his own medicine, and many physicians are not sufficiently trained in pharmacy to do so; they would therefore depend on ready-made tablets and pills. Scientific prescription writing would by this method become extinct, and the diagnosis of a case largely be guided by the tablets or the pills that the practitioner happens to have in stock; expensive drugs and chemicals would be banished and cheapness rather than efficacy be the leading motive to use a new remedy. Nor is there any safety for the physician or the patient in self-dispensing. The physician often accuses the pharmacist of not preparing a prescription properly or making a mistake. We will admit that this is sometimes the case; but if it is true that men who have devoted their whole lifetime to the preparing of prescriptions are apt to make mistakes, how much more is the physician subject to make mistakes, who is not particularly trained for such work and is from morning to night rushed for time.

In the state of New York there exists a law that a prescription containing a certain dose of opium, morphin or any similar preparation must not be renewed more than twice. This law was passed with the consent and knowledge of the physicians, who thereby admitted that the renewal of prescriptions is an acknowledged custom in the state, and put a check on indiscriminate renewals of certain prescriptions only. If, however, a restriction can be put on renewals of opiate prescriptions, it should not be difficult to pass laws against the renewal of any prescription unless the physician's consent is expressed. This consent can easily be given by a

short line on the prescription stating "The prescription must not be renewed or copied," the lines crossed out with the physician's initials written through it if the physician consents to the renewal.

It should be the object of the American Medical Association to institute a propaganda for the restriction of prescription renewal and thereby remove the danger that lies in such practices for the physician, the pharmacist and the public.

Clinical Report.

SALICYLATE OF SODA IN THE TREATMENT OF BASEDOW'S DISEASE.

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ST. LOUIS.

In the fall of 1900 my attention was called by Dr. J. Babinski of Paris to the treatment of exophthalmic goiter by the administration of salicylate of soda. At that time he saw, in consultation with me, a young man, aged 27, who had developed a goiter during the spring and summer of that year. The tumor presented pulsations like those seen in frankly developed Basedow's disease, but there were no other symptoms proper to that neurosis. Additional symptoms consisted of great lassitude, marked mental depression, lack of ambition and interest in intellectual work, and an expressionless countenance quite foreign to the individual. The patient had been treated with iodid of potassium and tincture of iodine externally without effect. On the advice of Dr. Babinski three grams of salicylate of soda were administered daily. In less than a month, to use Dr. Babinski's expression,¹ the goiter had almost entirely disappeared. Two months later it could not be detected, the treatment having been continued without interruption. With the disappearance of the goiter there was a complete transformation of the mental condition and appearance of the patient; he gained in weight, and dyspeptic symptoms, which had been troublesome for months, quite disappeared or became insignificant. The patient resumed his work, and, during the two years that have since elapsed, there has been no recurrence of any of the symptoms which were so marked during the year 1900.

In the published notes of the use of salicylate of soda in Basedow's disease, Dr. Babinski refers to this case as one in which the diagnosis was doubtful, but he precedes his reference to it with brief reports of two other cases in which all the classical symptoms of exophthalmic goiter were present, and which were practically cured by the administration of salicylate of soda. Thus familiarized with the possible utility of this drug in the treatment of Basedow's disease, I began its administration in a case which came under my observation in February, 1901, the clinical notes of which follow.

Miss X., aged 28, consulted me Feb. 22, 1901. She presented a marked fine tremor of the hands and arms; the pulse was 130; a goiter of moderate size was very apparent, in which pulsation was visible, and the peculiar thrill of vascular overaction was easily felt. The large vessels of the neck could be felt pulsating unduly. There was no exophthalmos. The heart sounds were normal, and there was no evidence of other abnormality in the nervous system or the vegetative organs. It may be added that some slight choreiform movements were noticed later from time to time.

Subjectively the patient complained of lassitude and very annoying cardiac palpitation, augmented to an extreme degree on exertion and immediately after taking food; of mental depression and lack of ambition; of inability to control herself, and attacks of prolonged laughing under circumstances that distressed her extremely; of excessive and very annoying perspiration; of tremor that interfered with her work; of dis-

turbed and unrefreshing sleep. Food usually caused distress, and constipation was more or less troublesome. All unpleasant symptoms were augmented at the period of the menses. There was no history of attacks of diarrhea.

The patient's family history presents a pronounced neurotic element. Both parents are "nervous"; one younger brother has been treated by me in two attacks of insanity, the first presenting maniacal symptoms some time after typhoid fever, the second, one year later, with delusions of a depressive, persecutory type that have never been fully corrected, though he is now (after one year) able to follow his usual occupation (bank clerk). Another brother and a sister present no mental or nervous abnormalities.

The patient had typhoid fever in 1890; in the summer of 1895 she went to Colorado for rest and change. At this time she had completed her third year in the university. In Colorado she was troubled by cardiac palpitation and breathlessness on the slightest exertion, doubtless owing to the elevation, and when she returned to her college work she found that marked tremor of her hands made it impossible for her to continue her work in the chemical laboratory. She graduated, notwithstanding her relative incapacity due to palpitation and tremor, and the year following was spent in Mississippi as a teacher. She continued to teach without interruption in her native place, to which she returned in 1898. She was finally led to consult me because of the aggravation of the tremor, pulsation and palpitation and the discovery that her neck was enlarging.

The patient was placed on salicylate of soda, gr. 30 daily, glyce-ro-phosphate of calcium, gr. 15 daily, with a galvanism to the cervical sympathetics (5 milliamperes) three times a week. Diet and rest were regulated, but work was not interrupted. Other occasional measures were directed to digestion and the bowels.

Improvement was immediate and continuous. The treatment was uninterrupted through the months of March, April and a part of May, 1901. In May the electric treatment was stopped, but the salicylate was continued throughout the summer with occasional interruptions of two weeks' duration. In the following October electric treatment was resumed and continued, more or less regularly, through the winter and spring, and the salicylate was taken as before.

Before the end of three months of treatment tremor had disappeared, the heart was beating at the rate of 80, and there were few nervous symptoms. The goiter was still present, though reduced in size. During the winter and spring of 1901-2 the improvement was maintained under trying and annoying conditions of occupation.

At the present time there are no symptoms of Basedow's disease. The neck is a little larger than normal, but this would not be noticed without a knowledge of the history.

The patient states that she never expected her heart to become so calm as it is now. Influences that formerly excited her heart to extreme over-action are now without such an effect.

This case is entirely similar to two reported by Dr. Babinski.

A case of exophthalmic goiter seen in consultation in a woman over 50 years of age was much benefited by the salicylate of soda, but I am unable to give a subsequent history, beyond the statement that she has not been so well in years.

In October, 1902, Mrs. P., aged 46, consulted me for general "nervous" symptoms, congestive headaches and inability to endure or perform her ordinary household duties. She had a large goiter that had first appeared in her fifteenth year and had increased in size since. Originally large on the left side, for some months it had been increasing rapidly on the right side, and she attributed some of her difficulty in breathing to this. She had developed insomnia, because the increasing size of the goiter made it necessary for her to lie in a fixed position, for any change from it immediately aroused her with a feeling of suffocation.

The heart sounds were normal; she complained of occasional palpitation and a feeling of congestion and pulsation of the neck, with flushing of the face at such times.

Her mother had a goiter that came on in girlhood and disappeared some time after the menopause.

1. Du Traitement de la Maladie de Basedow par le Salicylate de Soude, Extrait des Comptes Rendus de la Société de Neurologie de Paris, Séance du 7 février, 1901.

Thirty grains of salicylate of soda daily were ordered. Two weeks from the beginning of the medication the tumor on the right side of the neck had disappeared. Three months later the large tumor on the left side was decidedly reduced in volume. From the beginning there was an immediate change for the better in the "nervous" symptoms, and at the present time the patient feels perfectly well and capable of doing all that her circumstances of life demand. She can now walk blocks, whereas before she could not walk one without distress.

It should be remarked that the doses employed in these cases were far below those given in those reported by Bibinski. In some cases now under observation I shall not hesitate to increase the dose should improvement fail to occur.

The precautions to be observed in the administration of salicylate of soda are: a pure salt, care to observe the condition of the kidneys, and care to avoid irritation of the stomach.

In the absence of any proof of the manner of action of salicylate of soda in Basedow's disease it is unnecessary to indulge in speculative theories to explain its effect.

3750 Lindell Boulevard

New Instrument.

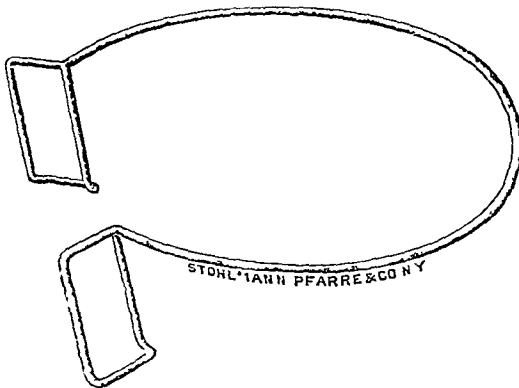
A NEW SELF-HOLDING RETRACTOR FOR USE IN GENERAL SURGERY

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NEW YORK

Although specialists have devised many forms of specula, there does not seem to have been made heretofore a practical self holding retractor for use in general surgery. The simple instrument here presented has proved of frequent practical use during five months.

Perhaps its principal field of utility will be found in emergency operations where the desired number of assistants is not available. Even where the usual number of assistants is at hand the use of this instrument may be preferable to



Large blunt retractor

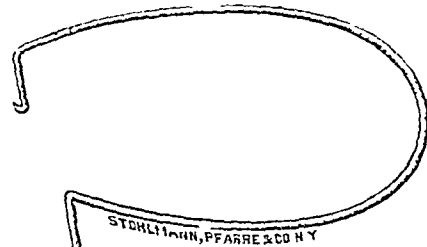
manual retraction, as this would permit the assistants to aid the operator in some other way.

It will never take the place of a hand retractor with an experienced brain behind it, nevertheless, it is easily applied and quickly shifted, and will stay where it is put. Beside sturdiness and accuracy of strength, it possesses another advantage of no little importance at times, and that is that it takes up almost no room when in use. The circular spring rests flat on the surface of the skin, and there are no screws or handles on which ligatures will catch. The curve at the end is arranged to prevent the circle from rising above the surface and getting in the way.

The instrument is of nickel plated steel wire, bent into three quarters of a circle, with its ends turned inside into sharp or blunt retractors. To insert it, the ends of the wire are brought together by grasping them in thumb and fingers. The retracting ends are then put into the wound and the edges are pulled

apart by the spring of the wire when released. Where the field of operation is especially large, it is sometimes convenient to use two of the retractors, their openings facing each other. In order to get different degrees of strength of pull, various calibers of wire and sizes of circles are provided, and for variety in the depths of wounds several sizes of retracting ends are made. For small or superficial wounds there are the simple sharp hooks, and for larger and deeper wounds the square faced blunt ends. The complete set of these retractors consists of a nest of twelve—six sharp and six blunt ones, in graded sizes—which have been determined by experience to be of practical use.

The strength of pull used in retraction is generally proportionate to the size and depth of the wound, but varies, of course, with the nature of the tissues involved. For instance, a pull of from four to ten pounds is commonly required in retracting wounds through the abdominal wall. A corresponding strength of pull will be found in the large blunt retractors.



Small sharp retractor

On the other hand, a pull of but a few ounces, as is given by the smaller sharp retractors, will retract a wound through the skin alone. But in dense tissues, as of scalp or sole, a surprising resistance to retraction is offered. To meet such conditions the larger sizes of the sharp retractors exert a pull of from three to five pounds when their ends are together.

One or both of these nests of six large and six small sizes may be handily tied together and boiled with the rest of the instruments required in an operation.

Some Baruch Don'ts in the Hydratic Management of Fevers.

—First Don't bathe in cold water to reduce fever, but to refresh the fever stricken patient. Second Don't permit cyanosis or chattering of teeth. Stop! Third Don't stop bathing because patient complains of chilliness. Fourth Don't raise temperature of baths on account of chilliness. Shorten bath and increase friction. Fifth Don't neglect friction during every cold procedure, it prevents chilling. Sixth Don't disregard the fact that the Brand bath at 65 to 70 degrees is the ideal bath for typhoid. Seventh Don't use the Brand bath in a bathroom. Eighth Don't give up bathing because the ideal bath is not procurable. Other procedures are useful. Ninth Don't use ice coil to abdomen. It has no refreshing effect and renders skin cyanotic beneath it. Tenth Don't lose sight of the fact that the chief aim of all cold procedures is reaction—"Denver Med Times."

Manual Compression of Uterus to Arrest Post-Partum Hemorrhage—A recent Lyons thesis ("Journ de Med de Paris") describes the method of arresting hemorrhage in vogue in the hospitals there, attributed to Professor Fochier. After expulsion of placenta and membranes, if there is hemorrhage from the empty uterus, four fingers of the right hand are passed up behind the uterus, between it and the spine and exert pressure on the "contractile part" of the uterus, pressing it forward against the left hand, which is applied to the abdomen above the pubis. The uterus is not flexed forward by the procedure, but the whole organ is slid forward, without altering the direction of its axis. The result is a compression of the placental sinuses, which arrests the hemorrhage directly, and stimulation of the contractility of the muscular fibers, thus aiding indirectly in the desired purpose. The procedure is also valuable as a diagnostic measure, and does not interfere with ergot, hot injections or saline transfusion later if deemed necessary.

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THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH.

It is to the American medical profession matter for congratulation that the modest beginnings of the Rockefeller Institute for Medical Research of two years ago have so speedily been succeeded by a gift from its founder large enough to permit of the building of a central institute and the planning of medical research on a larger scale in the city of New York. This undertaking, while undoubtedly of the highest significance for New York, is not a project of merely local interest; on the contrary, it is one which is of especial moment to every medical man and woman in the United States; indeed, we shall be surprised if the attention paid to it is arrested at our national borders, for, by virtue of the nature of the problems with which it will try to cope, the institute and its work will be a failure unless it quickly assumes a position of international importance.

In view of the large ideas of Mr. Rockefeller's advisers, it is also peculiarly gratifying to the medical profession and the public at large that the authorities of the institute have so soon made known the general plan underlying the foundation. Medical men watch with critical eyes all influences which may tend to improve or mar their vocation; it is only right and just that they should do so. An open avowal of intentions and prospects, such as has been made, apparently authoritatively, by the secretary of the board of directors of the new institute, can only meet with general approval, and THE JOURNAL hopes that this proper regard for professional and public interest and opinion may characterize the institute in all stages of its subsequent growth. That kind of publicity which makes an institution open to the observation and inquiry of the medical fraternity must not only exercise a wholesome influence on those who work in the institute itself, but is likely also to go far toward establishing public confidence in it, and toward assuring the people that they are obtaining from it the greatest benefits of which it is capable.

The institute began about two years ago with a fund of \$200,000, the income of which has been devoted to the making of grants of from \$200 to \$1,500 each to investigators working at American or foreign universities. These grants, or similar ones, for the furtherance of individual studies are, we understand, to be con-

tinued, and the new plans recently announced are for additional rather than for substitutive undertakings.

The most important feature, as we have already announced, of the new plans is the decision to erect a central research institution in New York City, overlooking East River, to equip it adequately and to provide permanent endowment for it. The land has been purchased, plans for the laboratory buildings, including a small hospital, are rapidly approaching completion, a scientific director has been appointed, the organization of an investigating staff is in progress, and the authorities hope to begin work in the Central Institute by Oct. 1, 1904.

In addition to the organization and endowment of the institute for investigation in New York, the board of directors assumes the responsibilities of publication of *The Journal of Experimental Medicine*, and of plans for a campaign of education of the profession and the public by means of lectures, publications and hygienic museums—all bearing on the general problem of the diffusion of knowledge regarding the prevention and cure of disease.

Convinced as we are of the grandeur of the opportunity which confronts the board of directors, we can not help being solicitous that nothing shall be left undone to secure the greatest advantages possible in the expenditure of the money already donated in order that the founder who has contributed this first \$1,200,000 may feel fully justified in providing subsequently the very large amounts which will be necessary to permanently endow the work which has been planned. We confess that the names of the members of the board go far to quiet fears lest any unwise disposition of the funds should be made, though we should have been glad to have seen on that board in addition to the men chosen from the Atlantic seaboard other scientists of equal caliber, say one from the Gulf region, one from the Pacific coast and one from the great Middle West. We feel, further, that the scope of the institute might have been very properly broadened by the representation on the board, beside pathology and bacteriology, of the two most fundamental sciences of medicine, anatomy and physiology; too great a scattering of the interests of such an institute, however, should, of course, be guarded against, and the directors may be wise in concentrating their efforts at first in the narrower field, provided an ultimate expansion so as to include the study of problems in the more basal sciences is kept in mind. Pathology can not progress far without the continuous provision of new facts and principles for application from the sciences of normal structure and function, sciences which in turn are dependent for their advance on the progress of knowledge and speculation in the fields of chemistry and physics.

There can be no doubt that the trustees of the Carnegie Institution have had the air cleared for them in a remarkable way by the host of suggestions and criticisms

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which they have elicited from scientific men all over the country. The value of these suggestive and critical contributions has, it is true, varied enormously; among them, it must be admitted, are to be found many that are extravagant and some that can not be classified as other than feeble-minded, but it is just as true that many of them have been original and constructive, and that the study of the whole mass can not fail to give important clues for the organization of the productive scholarship of the country and to exercise a wholesome restraint on those, if any, whose tendency would be to waste money and cerebral energy on travels along roads that the minds of our nation, most capable of judging, regard as impracticable. Might it not be wise if the directors of the Rockefeller Institute for Medical Research encouraged a similar frank expression of opinion from their confrères; the eminence of these directors is such that a request from them would insure placing at their disposition the maturest thought and the results of the most legitimate flights of the imagination of scientific medical men in every state of the Union.

BEHRING AND TUBERCULOSIS.

We have made a brief editorial notice¹ of some of the results obtained by von Behring and his coadjutors in their investigations of tuberculosis. The opinion was expressed then that some of the fundamental problems in tuberculosis were approaching solution, more particularly the problems in immunity to tuberculosis. Behring has succeeded in demonstrating that by injecting cattle, especially young, with small quantities of cultures of tubercle bacilli isolated from human tuberculous lesions, there is produced a complete immunity to bovine tuberculosis so far as may be determined by ordinary experimentation. He designated this method of immunization as "jennerization." It resembles in the essential points the method elaborated by the immortal Pasteur of immunization by "vaccinati" with attenuated virus.

Now the fact that cultures of human bacilli produce such solid immunity to virulent bovine bacilli can not be interpreted otherwise than as indicative of the close relationship between the tubercle bacilli from these two sources. Hence, Behring throws overboard Koch's dualistic theory, holding that the differences observable between bacilli of human and bovine origin are only such labile differences as are usually explainable on the score of special influences and modifications. Since Behring's first reports concerning successful immunization of cattle against tuberculosis, other investigators have published results which, though reached by slightly different methods, yet seem to substantiate the results he obtained. Thomassen, professor in the veterinary school at Utrecht, reports that under certain circumstances single injections of calves with cultures of human tubercle-bacilli produce definite immunity to such quantities of bacilli of bovine origin as rapidly cause fatal

miliary tuberculosis in control animals²—a brilliant confirmation of Behring's experiments. And on the heels of the Utrecht report comes one from Philadelphia by Pearson and Gilliland³ of similar bearing. To quote one of the conclusions of these workers: "After repeated intravenous injections of cultures of tubercle bacilli from human sputum the resistance of young cattle to virulent tubercle bacilli of bovine origin may be increased to such an extent that they are not injured by inoculation with quantities of such cultures that are capable of causing death or extensive infection of cattle not similarly protected." In the meantime, Behring and the workers in his institute at Marburg have had further opportunity to extend their observations on cattle immunized in the manner just outlined. Several immunized animals that had been exposed for over a year to spontaneous tuberculosis, by close association with tuberculous cattle, have been killed, but in none had tuberculosis become established.

The practice of immunizing young cattle has been extended on a larger scale with a view to testing most thoroughly its economic value and practical applicability. Hence it may be said with Behring that the principle of antituberculous immunization is now established on a firm basis so far as cattle are concerned, and that time alone can tell whether the particular methods now employed will yield the best practical results. As pointed out in the former editorial on Behring's great work, "it will form a landmark in the history of tuberculosis second in importance to no other work in this field since the discovery of the bacillus of tuberculosis." The next question is, to what extent will this production of immunity to tuberculosis in susceptible animals like cattle help in the struggle against human tuberculosis? This side of the problem is discussed in an interesting manner in a recent address by Behring in Vienna.⁴ After developing the reasons why he believes that the bacillus of bovine tuberculosis is infectious for human beings, Behring points out that it is in infants especially that we find tuberculosis of intestinal origin. This he believes is due largely to the fact that early in life the intestinal epithelium does not secrete mucus and other substances in sufficient quantities to protect against the invasion of tubercle bacilli from the intestinal tract, as there is reason to believe is the case in older persons. In order to protect against tuberculosis in children, Behring suggests feeding with milk from cattle immunized against tuberculosis. In this way the susceptible child would get the benefit, he thinks, of the protective substances present in the milk of the immunized cows. This deduction will receive further support when it is shown by experiments that the milk of immunized cows actually contains protective antituberculous substances in ap-

2. Recueil de méd. vétérin., Jan. 15, 1903.

3. Proceedings Phila. Path. Society, March, 1903: vi.

4. Wiener kl. Wochenschrift, 1903, xvi, 337-342. See also a review of Behring's work in Semaine Médicale, 1903, xxlii, 85-86. Behring's most extensive publication is in Beiträge zur Experimentelle Therapie, 1902.

preciable quantities. For various reasons direct immunization of human beings after the methods employed for cattle is not yet open for discussion. Then, again, it is self-evident that if immunization of cattle can be carried out successfully in actual practice on a well-nigh unlimited scale, it will result necessarily in restricting greatly the spread of tuberculosis at least among cattle and consequently of tubercle bacilli in nature. Finally, the discovery of a means to protect susceptible animals against tuberculosis by active immunization offers the greatest hope for the further discovery of curative substances and the development of a specific antituberculous treatment.

SURGICAL TREATMENT OF TYPHOID PERFORATION.

So long as the sanitary conditions in this country continue indifferent or bad as they are at present the question of treatment of typhoid perforation will continue to be of great importance, for typhoid fever is one of the most common diseases in many of our large cities. This interest in the subject of perforation will continue, not only because of the frequency of the complication, which has been estimated by various authors to occur in from 1.2 per cent. to 11.38 per cent. of all cases, but because of the almost absolute certainty of a fatal outcome unless operative treatment is adopted. Much of the recent interest in this subject must be credited to Keen, who, by his careful study of a large series of cases collected from the literature, was among the first to point out¹ the most important features in diagnosis, rational methods of treatment and the urgent necessity of surgical treatment in all such cases. The early diagnosis of perforation is undoubtedly of first importance, for unless the condition be recognized before general peritonitis has occurred the advantages of early operation are lost. One of the most satisfactory discussions of the diagnosis of typhoid perforation which has thus far appeared is contained in a paper by McCrae and Mitchell,² who report eight operations for perforation, two exploratory operations in cases in which no perforation was found, and eleven suspicious cases which were not operated on, out of 275 cases of surgical complications occurring during typhoid fever observed in the Johns Hopkins Hospital during two years.

Among the important points brought out in this paper are the dangers of masking symptoms by the use of opium. Too often the occurrence of abdominal pain is considered by the attending physician an indication for the use of opium in some form, and by its use the symptoms are masked until general peritonitis develops and a fatal outcome is almost inevitable. Much stress is laid on the importance of careful observation of all cases of typhoid from the beginning of the disease and watching carefully any abdominal symptoms. In this way the condition may be recognized at the time of onset of the symptoms. Notes on the patient's condition should be

made on paper, and not left to the physician's memory. In case suspicious symptoms occur the condition should be carefully watched from hour to hour and the surgeon should be called at the time of onset of abdominal symptoms. No symptom was found constantly present in all the cases, and no significance is attributed to the absence of any one symptom. The occurrence of symptoms is important, their absence is not. The most important symptom is the sudden onset of abdominal pain. Other symptoms, such as nausea or vomiting, rise of pulse rate, change of temperature, impairment of respiratory movements, muscle spasm, decrease of liver dulness, leucocytosis, etc., may be of some significance, but no conclusion can be drawn from the absence of many of them. Later on the symptoms do not differ from those of general peritonitis. The difficulties of diagnosis are evident, and with the slight risk of an exploratory operation doubtful cases should not be allowed to go beyond the limit of recovery without operation. An exploratory operation was done in two cases in which no perforation was found. In one the symptoms were due to intestinal hemorrhage; in the other to low-grade peritonitis. The first patient died; the second recovered. Perforation occurred in eight cases, seven of which were operated on with two recoveries, a third patient dying of toxemia a week after operation. All of the cases, except two accompanied by hemorrhage, were recognized within nine hours of perforation. In one case operation was not advised because the patient was in extremis. Eleven cases with suspicious abdominal symptoms were not operated on. Of these two died and the necropsy showed no perforation; the remaining nine recovered. In the treatment of perforation closure with purse-string suture reinforced by two or three Halsted sutures is recommended. This is essentially the same treatment which has been recommended by Keen and most other writers on this subject.

A new suggestion with regard to the treatment of these cases comes from Escher of the Triest City Hospital in Austria, who finds from a study of the literature records of ten cases of typhoid perforation treated by enterostomy with 40 per cent. of recoveries. This is in striking contrast to the 20 to 25 per cent. of recoveries following the usual method of suture of the perforation, and it led Escher to adopt this method of treatment as a routine. Of 4 cases treated by bringing the perforation up into the abdominal incision and suturing it there, which Escher treated personally, only one died. He believes that this is the method of choice, for not only is much time saved, but threatening symptoms of paralytic ileus and unfavorable symptoms of distension caused by paralysis of the intestine are avoided in this way. Suture is advised only in the most favorable cases, late in the disease when the general condition is good, the operation early and no distension present.

Whatever method of treatment may be adopted, physicians should always keep in mind the importance of

1. Surgical Complications and Sequels of Typhoid Fever, Philadelphia, 1898, and THE JOURNAL A. M. A., Jan. 20, 1900.
2. Johns Hopkins Hospital Reports, vol. x, Nos. 6, 7, 8 and 9.

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early diagnosis, and to this end every abdominal symptom should be observed and noted with greatest accuracy. If typhoid fever cases are thus carefully observed and operated on early when operation is indicated valuable lives will be saved every year. Perforation is probably as common in the hospitals of this and other countries as in those few hospitals from which yearly reports of successful operations are coming. The remarkable success which Escher reports from the treatment of these cases by using the perforation as an enterostomy opening would certainly seem to encourage the further employment of this method.

A COMPREHENSIVE DEFINITION OF THE PRACTICE OF MEDICINE.

We published in our last issue¹ the law recently passed amending the medical practice act of the state of Alabama. Alabama in the past has had an advantage over most other divisions of the country in that its medical law recognized no schools. All that is required is a knowledge of the essentials of medicine. In this way they have been able to keep out quacks and faddists who can not meet the requirements of the law by passing an examination in the fundamental branches. Recently an attempt was made to establish a board of osteopathic examiners, and the bill was at first favorably reported on in the legislature. After due discussion a substitute—the amendment published—was adopted and carried. In the framing of this it has seemed fit to the Alabama legislature to be a little more concise in its statement of the qualifications required for certificates to practice medicine, and in the new law it is worded “an applicant for a certificate of qualification to treat diseases of human beings by any system of treatment whatsoever,” which permits all schools to practice provided they meet the requisite conditions. This is still further specified in the close of the paragraph, which states that a certificate shall be issued which shall entitle the applicant “to treat any and all diseases of human beings in this state in any manner that he may deem best.” Neither homeopaths, osteopaths, Eddyites or any other class can claim that they are excluded, except it be by their own deficiencies. We believe that a simple statement such as the above is better in every way than the more elaborate definitions. The more verbiage that is expended on the subject the greater the chance for some error to slip in, or some legal evasion to be employed. Treating diseases of human beings “by any system of treatment whatsoever” covers the subject as comprehensively and fairly, it seems to us, as any combination of words that could be used.

INSANITY CAUSED BY “MORALITY.”

A writer in a popular review,² studying the occurrence of insanity in a limited locality in the north of Ireland, reaches some rather remarkable conclusions. The chief causes of insanity are, he claims: 1, Intermarriage of predisposed persons; 2, the postponement of marriage to the age at which the sexual function is enfeebled; 3, marriages where children are produced as fast and as long as the natural process allows. This last is, he

thinks, the greatest and most common cause of insanity, idiocy and neurasthenia. Reasoning from these assumptions, he declares that modern morality and marriage laws are directly opposed to the welfare of the race; that the normal physiologic condition is one in which apparently any kind of temporary contract would be permissible, and that all the social regulations which the experience of mankind has deduced are faulty from a biologic point of view. There is no doubt, of course, that rapid and excessive childbearing may have its effect on the offspring, and that some children born of aged parents are sometimes mentally handicapped in the struggle for existence. It is only the superficial observer, however, who sees in these conditions, especially in the limited region of a long-settled country depleted by immigration of its most vigorous population, any facts that will serve to formulate rules for the population in general. The cause of insanity is a complex one, and probably the great advance in civilization, invention, etc., acting on minds that are not prepared for it and the stress of modern conditions of living are far more effective, certainly as a general rule. He holds, also, that it is a generally recognized fact that those whose duties bring them in contact with the insane become predisposed to the disease. This is a popular error which can be easily refuted, but he takes it as a self-evident fact and basis for his remarks, holding that association gradually aggravated the conditions he describes. Therefore he attributes to two factors, conventional morality and association, the chief increase of insanity. The article is a pretty good example of false reasoning from defective data. The physiologic social conditions which the writer in question seems to think would be a preventive of mental disease, are absolutely impracticable under modern civilization. It does not speak well for the bent of his mind that he should thus ignore actual realities in favor of a very strained and not very moral or edifying theory.

CHORIONIC STRUCTURES IN TUMORS OF THE TESTICLES.

The occurrence of chorionic epithelium and of syncytium elsewhere than in connection with pregnancy, normal and pathologic, at first thought seems entirely unlikely and paradoxical. There have been described, however, a considerable number of mixed or teratomatous growths of the testicle in which were contained large cells and syncytial masses similar to those of the placenta and of the interesting tumor that occasionally develops from the placenta, variously designated as chorioepithelioma, syncytioma, placentoma, etc. Peculiar testicular tumors of this kind have been observed from time to time and described under different special names—as angioplastic sarcoma by Malassez and Monod, who regarded the masses of anastomosing giant-like cells with spaces often filled with blood vessels as incompletely developed new vessels. Within the last year Wlassow¹ and Schlagenhauser,² independently of each other, describe tumors in the testicle with syncytial masses and hydatidiform structures both in the primary

1. THE JOURNAL, April 11, p. 1000.

2. Westminster Review, London.

1. Virchow's Archiv, 1902, clix, 220-240.

2. Wien. kl. Wochenschr., 1902, xv, 370-380 and 604-606.

and secondary growths. Wlassow calls such tumors *epithelioma syncytiomatodes testiculi*. In the metastases the appearances were quite identical with those of chorioepithelioma developing in connection with pregnancy. Schlagenhauser makes the same observations, and states that had the source of the tumors been unknown they would undoubtedly have been referred to the placenta. Carey³ also describes syncytial and decidua structures in a testicular teratoma. To complete this interesting demonstration there are described also testicular tumors with distinct chorionic villi undergoing myxomatous degeneration, i. e., tumors with structures corresponding to parts of hydatidiform moles. This, too, is an old observation. Curious formations, generally intravascular, have been likened by various authors to the myxomatous villi of hydatidiform moles. Schlagenhauser demonstrates chorionic villi in the metastases of an early example of this sort of tumor first recorded by Breu. In order to explain this finding of chorionic structures in so unexpected a locality as tumors of the testicle Wlassow suggests that it concerns the chorion of an embryo which forms the testicular teratoma (embryoma), while Schlagenhauser traces them to the inclusion within the testicle of remnants of fetal membrane, more particularly parts of the epithelial lining. Be that as it may, the observations noted certainly serve to excite wonder and increasing interest in the theories as to the origin of the teratomas (embryomas) of the testicle and ovary.

URBAN MORTALITY.

A recent weekly Bulletin of the Chicago Health Department contains a discussion of urban death rates that gives some encouraging indications of improved city sanitation. In 1893 the claimed Chicago death rate of 16.92 per thousand of population was denounced as an impossible figure for any city with over 1,000,000 inhabitants. No ratio less than 18 per thousand could be accepted was the verdict of an eminent sanitary statistician of that day. At the present time, according to the Bulletin, New York is the only city of the first class that still sustains the above assertion, its mortality in 1902 was 18.75, while that of London was 17.70, and that claimed for Chicago 14.53. The present health administration of New York City has, however, in one year reduced the death ratio more than 14 per cent., and therefore promises well to bring its statistics down below the alleged "impossible" figure of 1892. Of course, the statistics of a single year prove little, but if they are the latest figures showing a steady decline for years they suggest much, even the possibility of bringing urban mortality down to the figures of well sanitized rural communities. Chicago's low death rate is due probably more to the fact that it has a bordering area of 20,000 square miles of pure lake air, than to its own sanitary righteousness as so far perfected. This is shown in the death rate from typhoid fever and other disorders that depend largely for their prevalence on certain unsanitary conditions. The Bulletin gives some suggestive comparisons of the mortality in London and Chicago respect-

ively from three of the notifiable diseases, diphtheria, scarlatina and typhoid, showing that the ratio in Chicago is almost double that of London. On the other hand, measles, whooping cough and diarrheal affections reverse the condition and the mortality in proportion to population in Chicago is less than half that of London. It is not exactly clear why this latter difference should exist, but very probably the pure air with the better ventilation of the "windy city" may have as much to do with it as any other one factor. Another matter, however, which may be a factor to some extent in causing the higher death rate from such compulsorily notifiable disorders as diphtheria and scarlatina, and which is so accepted by the Chicago health commissioner, is the hospital provision for such cases. With proper hospital care and isolation a lowered death rate from these disorders might naturally be expected, as well as much in the way of prophylaxis. This is shown particularly in such disorders as smallpox, in which case hospital isolation is the first resort after the recognition of the disease. It is very probable that similar brilliant results would follow isolation of other properly notifiable diseases.

Medical News.

CONNECTICUT.

Hospital for Greenwich.—It is announced that \$30,000 has already been subscribed toward a hospital for Greenwich. It has been decided to raise \$100,000 before any work is started.

Sanatorium Fire.—On March 16 the residence and sanatorium of Dr. George F. Converse, New Haven, were seriously damaged by fire, caused by an explosion of benzine. The family of Dr. Converse and the patients were removed from the building without casualty.

Infectious Diseases.—Smallpox was reported during February to exist in 6 towns, with 47 cases; there were 1,099 cases of measles, in 66 towns; 339 of scarlet fever, in 55 towns; 3 of cerebro-spinal fever, in 2 towns; 170 of diphtheria, in 43 towns; 344 of whooping cough, in 40 towns; 20 of typhoid fever in 12 towns, and 12 of consumption, in 6 towns.

February Deaths.—During February 1,294 deaths were reported in the state; 124 less than for the previous month; 170 more than for February, 1902, and 98 more than the average for February for the five years preceding. The mortality was at the rate of 17.1 per 1,000 per annum. Infectious diseases caused 312 deaths, or 24.1 per cent. of the total mortality. Diseases of the nervous system caused 144 deaths; pneumonia, 176; consumption, 101; influenza, 86; bronchitis, 55; heart disease, 134, and violence, 50.

GEORGIA.

Army Hospital at Chickamauga.—The contract for the post hospital at Chickamauga has been awarded at \$52,561.

State Board of Examiners.—The board held its annual meeting at Atlanta, April 3, and elected Dr. Joses B. S. Holmes, Atlanta, president; Dr. Fred D. Patterson, Cuthbert, vice-president, and Dr. Isham H. Goss, Athens, secretary. Out of the 57 applicants for license to practice medicine in the state, 47 passed the examination; 5 out of 6 colored applicants passed.

Atlanta College Commencement.—The graduating exercises of the Atlanta College of Physicians and Surgeons were held March 31. Owing to the change in course from three to four years, the class was relatively small, numbering only 39. Hon. Hugh M. Dorsey delivered the address of the evening, and Judge Howard Van Epps, president of the board of trustees, conferred the degrees.

State Board of Health Needed.—Georgia is one of the few states which has no state board of health. Drs. Charles Hiekes, Dublin, president of the Medical Association of Georgia, and George Brown, Atlanta, recently called on the governor to urge on him the necessity of the establishment of a state board of health, and obtained from him his endorsement and his promise

3. Bull. Johns Hopkins Hospital, 1902, xii, 268-279.

that he would send a special message to the legislature recommending the creation of the board.

ILLINOIS.

Quarantine Raised.—The town board of health of Lake Forest raised the quarantine which has existed for two months, on account of the scarlet fever epidemic, April 10. In all, 101 cases were reported, a large proportion of the patients being children, and only two deaths occurred.

Births in 1902.—During the year just ended 76,608 births were reported to the State Board of Health. Of these 38,671 were males and 37,937 females, and the sex was not reported in 612 instances; 572 twins were born and 15 triplets. Stillbirths numbered 1,767. Cook County leads with 19,115 births; then follow La Salle County with 1,737; Will, with 1,481; Vermilion, with 1,418; Peoria, with 1,388; Sangamon, with 1,358; Kane, with 1,297; McLean, with 1,267; Madison, with 1,105; St. Clair, with 1,004, and Champaign with 1,057. These figures are not complete, and the births for the year are estimated at 85,000.

Chicago.

Personal.—Dr. Joseph Jeffrey, a colored physician, was adjudged insane, April 9, and committed to the Cook County Insane Hospital, Dunning.

Deaths of the Week.—The total deaths were 592; 43 more than for the previous week and 30 more than for the corresponding week of 1902. This represents an annual death-rate per 1,000 of 16.36. Pneumonia again heads the list with 135 deaths; consumption caused 59; nervous diseases, 45; heart disease, 41; bronchitis, 30; cancer, 28; Bright's disease, 27, and violence, 26. Measles is given as the cause of death in 10 cases, and whooping cough in 13 cases.

Smallpox.—The isolation hospital received 21 new cases of smallpox during the week ended April 11. Of these 5 were negroes; 6 were under 6 years of age; 18 had never been vaccinated, and the remaining 3 had old doubtful vaccination scars. The hospital record for the year is as follows: January, 50 cases; February, 55; March, 60; April, 26 cases to date; total, 191 cases received; deaths, 28; discharged recovered, 106; remaining under treatment at the close of the week, 57. Last year at this time there were 40 in the hospital.

Fear Rabies.—The Chicago Medical Society, at its meeting, April 8, considered the danger from hydrophobia. Dr. Arthur D. Bevan read a paper on the prevalence of rabies, which he said had caused at least 91 deaths since 1891. The society passed the following resolution:

The Chicago Medical Society, through its board of councillors, calls the attention of the city authorities to the fact that the disease hydrophobia is prevalent in the city; that it is possible to practically eradicate it by proper dog laws properly enforced. Therefore it respectfully petitions the mayor and the common council to immediately take such steps as are necessary to accomplish this result.

Measles Not Light Disease.—In the Bulletin for the week ended April 11, the department of health earnestly warns the public against the prevalent idea that measles is a disease to be lightly considered. It says:

Of the total 207 cases of the contagious diseases reported during the week 87, or nearly one-half, were of measles, and during the first three months of the year 60 deaths were reported from this disease as against only 20 during the corresponding period of 1902. This is two and a half times as many as last year, and in proportion to population it represents an increase of very nearly one-third over the average of the previous ten years—the ten-year average rate being 0.94 and the 1903 rate being 1.22 per 10,000 of population.

About 60 per cent. of all deaths from measles are among those between 6 months and 2 years of age. After the fourth year the mortality rate falls rapidly, but one out of every four infants attacked with the disease dies. . . . Only a relatively small proportion of the deaths from measles are reported as such—the immediate cause of death, such as broncho-pneumonia, capillary bronchitis, lobar pneumonia or similar grave affection developed during an attack of measles, being given as the actual cause. Next to scarlet fever measles is the most serious of the diseases of childhood in its after effects on many of those who recover.

KENTUCKY.

Asylum Investigation.—The committee on investigation from the board of commissioners of the Central Kentucky Asylum for the Insane, at Lakeland, has developed some startling facts in regard to alleged brutality on the part of the attendants, and as a result, in the past two weeks, three attendants have left, two having been dismissed.

Louisville.

New Jewish Hospital.—It has been practically decided that the new Jewish Hospital will be located on Barrett avenue, near the present St. Anthony's Hospital, and the construction will soon begin. The building is to be of ample proportions.

MARYLAND.

Smallpox at Homburgville.—In a negro camp, on the line of the electric railway from Baltimore to Sparrow's Point, a water suburb, five cases of smallpox have been discovered. The negroes in the camp came from Virginia.

Hospital for Easton.—The physicians of Talbot County met at Easton, April 8, to discuss plans for a public hospital there. Dr. E. M. Harcastle presided. It was the sense of the meeting that each district of the county should be represented on the board of directors. The matter was further discussed at a public meeting April 16.

The Maryland Examination Record.—The statement regarding the highest honor in the state examinations having been carried off by a woman and a graduate of the Woman's Medical College (see issue of March 28) applies to the examinations of the Spring of 1902. There were then 105 applicants, of whom 88 were graduates eligible to examination for license to register as physician and surgeon. The woman in question (No. 57) received an average of 92%. At the examinations held in December, 1902, of the 30 applicants for license the honors were taken by a Johns Hopkins graduate, with an average of 95%. It is of interest to note the results of the above examinations. Of the 88, 64 received the average of 75 required to pass. Of the 17 second year students, 12 failed at the same examination. In the December examination, of 30, 9 only passed, and of the 11 who took re-examination at that time not one passed.

Baltimore.

Personal.—Dr. William H. Howell, dean of the Johns Hopkins Medical School, has been elected a member of the American Philosophical Society.

Crim Antiques Auction.—The collection of antiques left by Dr. Crim will be sold by auction, beginning April 22. The catalog lists nearly 3,000 articles.

Appointment.—The supervisors of city charities have appointed Dr. Henry D. Purdum resident physician to the insane department of Bay View Asylum for the ensuing year. Dr. Purdum has been acting as resident physician.

Sickness and Deaths.—The deaths last week were 164, an annual rate of 15.31 per 1,000. Scarlet fever is on the increase and influenza still prevails. Pneumonia has again come down below consumption, the respective figures being 17 and 21.

Suit Against Telegraph Company.—Dr. Howard A. Kelly has brought suit for \$2,000 damages against the Western Union Telegraph Company, for alleged negligence to transmit two telegrams to him last October, whereby he was prevented from performing an important operation at Cambridge, Md.

Commitment of the Insane.—In an address before the Bar Association, Dr. George J. Preston, secretary of the Lunacy Commission, stated that the present commitments of the insane signed by two physicians are not legal and that persons so committed may be released under habeas corpus. He proposed an insane law providing for examination by two physicians, whose certificates shall be sworn and submitted to a judge of the Court of Records. He thought the lunacy board should have more power to move and transfer cases, and that all insane people should be under state control instead of in private institutions. Dr. E. N. Brush of the Sheppard and Enoch Pratt Hospital spoke on similar lines.

MASSACHUSETTS.

Personal.—Dr. Edwin Welles Dwight, Boston, has been appointed medical director of the New England Mutual Life Insurance Company, vice Dr. John Homans, deceased.

Smallpox Expense Not Limited.—The legislature has refused to set a limit to the expense incurred in the care of smallpox patients. A bill was urged limiting the liability of cities and towns to \$35 per week.

Deaths of the Week.—The 219 deaths in Boston for the week ended April 11 make an annual death-rate of 19.48 per 1,000. Diphtheria caused 8 deaths; scarlatina, 3; typhoid fever, 3; tuberculosis, 26; pneumonia, 29; whooping cough, 2, and heart disease, 29. The number of children who died under 1 year was 36, and under 5 years 52.

Changes in Hospital Staff.—Further changes in the hospital staffs are made by the appointment of Dr. Daniel Fiske Jones as surgeon to out-patients of the Massachusetts General Hospital, Boston, and Dr. William H. Smith, physician to out-patients at the same institution, while Dr. Edwin A. Locke is appointed physician to out-patients at the Boston City Hospital.

NEBRASKA.

Asylum To Be Rebuilt.—The senate has passed the house bill appropriating \$100,000 to rebuild the Norfolk Hospital for the Insane.

Fund Grows.—More than \$40,000 has been raised toward the building fund of the Methodist Hospital, to be erected in Omaha.

Suit Dismissed.—The suit of Mrs. Sadie Coleman against Dr. John E. Summers, Jr., Omaha, alleging malpractice and claiming \$20,000 damages, has been dismissed without prejudice.

New Building for Asylum.—The house committee on asylums has recommended the appropriation of \$25,000 for a new building at the Institute for Feeble-Minded Youth, Beatrice.

Personal.—Dr. Daniel R. Brower, Chicago, has accepted the invitation to deliver the doctorate address before the medical department of the University of Nebraska at Omaha, May 14.

NEW YORK.

More Smallpox at Rochester.—Rochester has another epidemic of smallpox to combat. Within 24 hours 5 patients were sent to Hope Hospital.

Hospital Incorporated.—The Frederick Ferris Thompson Hospital, Canandaigua, has been incorporated. This hospital has been given to the village by Mrs. Thompson, in memory of her husband, and is now rapidly approaching completion.

Coroner's Bill Recommitted.—Senator Elsbeg's bill abolishing the office of Coroner in Greater New York, which it was announced last week had been passed, was referred back to the Cities Committee by the Assembly, April 8, by a vote of 62 to 48.

Arrested.—Dr. George A. Lyons, New Rochelle, was arrested and held to the grand jury on the charge of manslaughter in the first degree. The arrest was the result of an investigation by the coroner into the death from blood poisoning, of Mrs. William Sears, of New Rochelle.

Approve Regents and Stevens Bill.—Physicians of Rochester have united in a petition to the senators and assemblymen from Monroe County, expressing their approval of the Stevens bill to unify the state's system of education and to place it all under the control of the Board of Regents, and furthermore, commending the board for its impartiality in the conduct of examinations for licenses to practice medicine.

Bill Against Consumptive Sanatoria.—Assemblyman Bedell has introduced a bill making it obligatory to have the consent of the county board of supervisors in order to institute a consumptive sanatorium or tent hospital. This action is taken in anticipation of Health Officer Lederle's desire to organize consumptive tent sanatoria in selected places outside of Greater New York for the proper treatment of the consumptive poor of New York.

Parochial Schools Exempt.—Attorney-General Cumsen has decided that compulsory vaccination does not apply to the parochial schools. This is a step backward in the endeavor of the state to combat the smallpox epidemic. Had this ruling prevailed during the visitation of smallpox in Buffalo, where its spread was confined to the Polish district, where the children attended the Polish parochial schools, the spread of smallpox could not have been successfully combated in Buffalo.

Personal.—Dr. Luzerne Colville, lecturer on surgery, Cornell Medical College, Ithaca, has resigned on account of disagreements with the Infirmary Committee regarding the management of that institution.—Dr. Thomas L. Craig, Davenport, has contracted smallpox.—Dr. Henry C. Hendrick, McGrawville, was the guest of honor at a banquet given by the Cortland County Medical Society, April 9, in commemoration of his semi-centenary of practice.—Dr. Floyd Palmer, East Meredith, has been appointed medical interne at the Matteawan State Hospital.—Dr. Wallace Clarke, has been appointed health officer of Utica, vice Dr. Peter J. Campbell, resigned on account of ill-health.

Buffalo.

Fraud Fined.—H. H. Bridgwater, who is said to have conducted business for the notorious Antonius during his confinement in jail, was arraigned on the charge of violating the health laws in assuming the title of physician and in practicing medicine without a license, and was fined \$50.

Personal.—Dr. Herman E. Hayd has been elected attending surgeon to the German Hospital, vice Dr. Herman Mynter, deceased.—Dr. Augustus G. Pohlman of Buffalo, who has been studying for two years at Freiburg, has returned.—Dr.

Chauncey P. Smith has been appointed surgeon of the Buffalo, Rochester and Pittsburg Railroad.

Antonius in Prison.—From time to time mention has been made in these columns concerning the operations in Buffalo of Antonius, a so-called healer, who, by paying large advertising rates to the public press muzzled them, and, by virtually making them accessory to his unlawful practices, swindled hundreds of sick and crippled victims, many of them giving up actual necessities of life in order to gather sufficient money to pay the exorbitant fees exacted by him. Antonius was sentenced to serve nine months in the penitentiary. In the case of his assistant, Dr. Frankius Temple, who pleaded guilty to conspiracy to defraud, sentence was suspended.

Daily Press Censured.—The grand jury has censured the papers as follows:

The grand jury of the County of Erie (Buffalo) for February, 1903, believing that the newspapers of Buffalo are and ought to be powerful factors in the improvement of existing conditions in matters affecting our moral and municipal life . . . does hereby express its emphatic disapproval of the course of some of our reputable newspapers in allowing the use of their columns for advertising transparent fakes and frauds for deceiving the public. The grand jury believes that in so doing these papers are lending their aid to schemes for fleecing the credulous and unwary instead of protecting the interests of the public by exposing such frauds or by refusing to publish such advertisements.

New York City.

Annex to Hospital.—Plans have been filed for a six-story brick hospital, 140 by 61, to be an annex to the Willard Parker Hospital. The Department of Health is the owner of the property. The building will be of limestone and brick and will cost \$350,000.

Hospital Saturday and Sunday Collection.—The total collections will reach \$82,000 and, after deducting \$9,927.75 especially designated, along with the necessary expenses, there will remain about \$68,000 for distribution to the hospitals of the association on the basis of the free work done.

Arrested and Discharged.—Dr. A. Palmer Dudley was arrested at the instigation of the husband of a patient on the charge of being a suspicious person. The reason for the action was that Dr. Dudley, after consultation with the physician of the patient, had operated in order to save her life. On hearing the evidence, the magistrate promptly discharged Dr. Dudley.

"Spit-Cards."—Beginning March 24, conductors of street cars were instructed to hand to violators of the ordinance against spitting a small yellow card on which the following notice is printed:

You are violating the law against spitting. You are subject to a fine or imprisonment or both. By order of the board of health.

E. J. LUDWIG, President.

Personal.—Dr. O. L. Mulot, Brooklyn, has resigned from the medical staff of the Bethany Deaconesses' Hospital and Home.—Dr. Charles Wesley Hall, who has been in charge of the quarantine station at Hoffman Island, has resigned and will resume practice in the west.—Dr. Frederick A. Dillingham, assistant sanitary superintendent for Manhattan, who has served in the department for twenty-one years, was retired, with an annual pension of \$1,200.

OHIO.

Smallpox Alarming.—The smallpox situation in the state is causing alarm to the authorities. In the last 8 weeks 1,363 cases have been reported, with 73 deaths. The State Board of Health is vigorously urging general vaccination.

Personal.—Dr. James J. La Salle, Toledo, police surgeon and assistant health officer, has resigned and will study abroad.—Dr. William A. Ewing, Dayton, has been appointed jail physician.—Dr. Christian R. Holmes, Cincinnati, is visiting Denmark and will visit other points in Europe.—Dr. K. S. West has been appointed assistant physician at the Cleveland State Hospital for Insane.—Dr. Edward J. Wilson, Columbus, has been appointed a member of the Ohio State Board of Medical Registration and Examination for a term of seven years.

PENNSYLVANIA.

Hospital Contract Awarded.—The contract for building the Allegheny General Hospital has been awarded to a Philadelphia firm.

Hospital Appropriation Bills Signed.—Governor Pennypacker has signed bills appropriating \$260,000 each to Jefferson Hospital and to Medico-Chirurgical Hospital, Philadelphia.

Embezzler Sentenced.—J. Howard Climensson, defaulting treasurer of the Pennsylvania Epileptic Hospital and Colony Farm at Oakbourne, having pleaded guilty to three indictments

charging him with embezzling \$9,106 from the institution, was sentenced to serve eight years in the Eastern Penitentiary. His defalcations are said greatly to exceed the amount charged in the indictments.

Country Convalescent Home.—A new country home for convalescent children has been established at Gwynedd, Montgomery County. The institution is a large handsome mansion on the brow of a hill. Pure air, pure water, choice food and outdoor recreation are provided. A few philanthropists of Philadelphia have chartered the home and have thus far supported it. Its expenses are estimated at \$4,000 a year.

State Board of Barbers.—A bill creating a state board of barbers awaits the action of the governor. The board would consist of two master and three journeymen barbers who should formulate sanitary regulations and rules for the conduct of shops. The bill would impose a license fee of \$1 on every barber of first, second or third-class cities or in boroughs of 10,000 population. The bill is generally commended by the trade.

Bills Passed and Pending.—A bill appropriating \$50,000 for combatting smallpox in Pennsylvania has been passed by the legislature and signed by the governor. The fight against smallpox is to be conducted under the direction of the State Board of Health, with headquarters, perhaps, at Johnstown. The bill introduced into the legislature providing for the licensing of osteopaths was defeated in the house by a vote of 89 yeas to 67 nays, 14 less than a constitutional majority.

Governor Wants Appropriation Bills.—The governor has asked that the bills passed on favorably in the legislature appropriating money for hospitals connected with medical colleges all be sent to him at once. The following, of such appropriations, are recommended: Medico-Chirurgical Hospital, \$290,000; Jefferson Hospital, \$260,000; University of Pennsylvania Hospital, \$175,000; Hahnemann Hospital, \$125,000; Polyclinic Hospital, \$55,000; Garretson Hospital, \$40,000; Women's Hospital, \$25,000, all of Philadelphia, and Reineman Maternity Hospital, Pittsburg, \$25,000.

Public Health and Charities.—The bill providing for the department of public health and charities on Philadelphia has become a law. This new department supersedes the Department of Charities and Correction, which is abolished. The bureau of Correction is now placed in the Department of Public Safety. The bill provides that:

The Department of Public Health and Charities shall be under the charge of a director and an assistant director, whom the mayor shall appoint, to which department shall be confided the care, management, administration and supervision of the public health, charities, almshouses, hospitals and all other similar institutions, the control or government of which is intrusted to the city.

The director of public health and charities, as chief executive officer thereof, shall appoint, supervise and control all the subordinate officers and employees attached to the department, and shall appoint all vaccine physicians and health inspectors; and all hospitals belonging to the municipality where provision is made for the care of contagious diseases shall be under the immediate supervision and control of the director of public health and charities.

The director of the Department of Public Health and Charities shall also be appointed by the mayor, but his term of office shall be four years from the date of his appointment if he shall so long behave himself well.

An ordinance has been introduced into councils providing for the new department, an appropriation being necessary. The annual salary of the director of the Department of Public Health and Charities is to be \$10,000; assistant director, \$4,000, and chief clerk, \$2,500.

Philadelphia.

The New Jefferson Hospital.—The old buildings at Sansom and Tenth Streets are being torn down preparatory to the erection of the new Jefferson Hospital building.

Morbidity.—Typhoid fever still claims a large number of victims. For the week ended April 4 there were 184 new cases. There were 48 new cases of diphtheria, 105 of scarlet fever, and 27 of smallpox.

Infectious Diseases.—Typhoid fever still has a large number of victims. To the bureau of health for the week ended April 11, 204 new cases were reported; of diphtheria 50; of scarlet fever 70; and of smallpox 16 new cases.

Personal.—Dr. John Marshall, professor of chemistry in the University of Pennsylvania Medical College and dean for many years, has been granted a leave of absence owing to ill health. It is said that he will soon sail for Europe.—Dr. John I. McKelway, acting chief resident physician of the Philadelphia Hospital, has tendered his resignation, to take effect April 15. He has accepted a position as chief physician of the city hospital, at Binghamton, N. Y.

Evans Institute.—At a recent meeting of the directors of the proposed Thomas W. Evans Museum and Dental Institute the city solicitor announced that there is now available, from the estate of Dr. Evans, about \$2,500,000 for building and endowment of the institute, which is to be located in West Philadelphia. The will provides that the institution shall give free instruction in dental surgery.

March Temperature.—The month of March was a record breaker as regards temperature in Philadelphia. The mean temperature for the month, 49.4, was 3.2 in excess of that for March, 1902; 8.5 in excess of the normal for the past thirty-two years, and 8 in excess of the previous record, which occurred in 1871. The temperature was as low as the freezing point on but two dates, and the mean temperature was above normal on all but two dates. The total rainfall was 4.38 inches, 1 inch in excess of the normal.

TENNESSEE.

Firm Sued.—Suit for alleged malpractice in an operation and after-treatment has been brought by J. W. Bowden against "Dr. Roland Register & Co.," Memphis, with damages of \$10,000.

State Board Commended.—The house committee appointed to investigate the State Board of Health has reported that valuable service has been rendered and that the board has practiced splendid economy. It especially eulogizes the work of the secretary and executive officer, Dr. James A. Albright, and recommends that his salary be increased to \$2,000 per annum. It also recommends an appropriation of \$5,000 for the "prevention and suppression of human epidemic diseases."

Happel on Ethics.—In his address to the first class of medical students at Vanderbilt University, Nashville, who had completed the four years' course, Dr. T. J. Happel gave much practical advice concerning the ethics of the medical profession. The code of ethics, said he, should be to the student a pillar of cloud by day and a fire by night to guide him aright. He likened the relation of the physician to his patient to that of the priest to his confessor. A physician should at all times be ready to furnish to his brothers all information possible, and magnanimity should characterize his conduct at all times. All physicians except those who have a qualifying adjective before their vocation, may be called in consultation. The practice of advertising with flaming circulars and handbills is to be condemned. A young physician should be cautious in starting his professional career, and should avoid proclaiming from the court house and church that he has come to town, as he understood the place was in need of a live practitioner. He characterized the offering of expert testimony by a physician in court as the most thankless work that can be done by a physician. He gets a paltry sum for this trouble, loses time and money, and draws the ridicule of the opposing counsel. The compensation in such cases should be paid by the state. He urged his hearers to be men as well as physicians, and to make good citizens, not afraid to speak on matters of the day because they are physicians.

WISCONSIN.

Fear Hydrophobia.—On account of threatened hydrophobia, the mayor of Kenosha has ordered the police to kill all dogs found running at large.

Tuberculosis Sanatorium.—Dr. William B. Hopkins, Cumberland, is making arrangements to open a sanatorium for consumptives on the shores of Lake Nebagamon.

Gives House for Hospital.—H. H. Camp, Milwaukee, has deeded his residence to the Children's Hospital Association, and in addition has contributed largely to the endowment fund of the institution.

Women Want Spitting Stopped.—Milwaukee women have sent a petition to the city council requesting an ordinance prohibiting spitting on the floors of street and railway cars, public conveyances and buildings, etc.

Guilty, but Sentence Suspended.—In the case of Dr. B. Fowler Baker, Milwaukee, charged with violating the health laws by not reporting that he was ill with smallpox, was found guilty, but sentence was suspended without payment of costs.

GENERAL.

To Senn Prize Contestants.—Will the author of the article which was offered for the Senn prize of 1901, under the motto "Victrix Fortunae Sapientia," send his name and address to the Editor of THE JOURNAL?

Personal.—Major A. Gregory Hull, chief surgeon of the Soldiers' Home at Leavenworth, Kan., has been appointed chief

surgeon of the new Soldiers' Home Sanitarium at Hot Springs, S. D. He will be succeeded by Dr. John L. Fryer, assistant surgeon at Leavenworth.

Fear Plague in Kansas.—A telegram in the daily press states that plague may exist in Rice County, Kansas. A tramp was hired to work with a section gang and is alleged to have been the cause of the death by disease of nine laborers. The possibility of ptomain or other method of poisoning is not mentioned. Dr. Charles Lowry, secretary of the State Board of Health, is said to have gone to Rice County to investigate the matter.

Navy Medical Corps' Increase.—The new law provides for 150 more physicians in the Navy, 25 of whom are to be appointed each year for 6 years. In addition, about 10 vacancies are caused yearly by casualties, retirements, etc., which makes a total of about 35 positions available yearly. The pay is from \$1,400 to \$2,300 during the first ten years, according to rank. Higher officers receive more. A new officer is first assigned to a naval hospital, of which there are fourteen. A course at the medical school follows, taking up work with which a civilian is not so familiar. After this the surgeon is assigned to sea duty. The equipments of hospitals, medical school and of most ships is ample and modern. Further information may be had of the Secretary of the Navy. Entrance requires no political or other influence. Candidates must be physically sound, aged between 21 and 30, and must pass an examination similar to that of a state board. The examiners are in continuous session at Washington, D. C., and Mare Island, Cal.

CANADA.

Montreal Civic Hospitals.—The erection of the new Protestant hospital for contagious diseases in Montreal will soon be started. The plans for the Civic Contagious Diseases Hospital are being prepared. These hospitals will be on similar plans.

Queen's University Medical Convocation was held April 9. The chancellor's prize of \$70 was won by Mr. A. H. Leonard of Kingston, but as he is unable to hold both it and a hospital house-surgeoncy, the honor passes to G. H. Ward of Napanee. The graduates were laureated by the chancellor and Dr. Herald, secretary of the medical faculty. Mr. J. L. McDowall was the valedictorian.

Suppression of Tuberculosis in Montreal.—The Montreal City Council will aid the recently inaugurated League for the Suppression of Tuberculosis in that city. The hygienic committee has decided to ask all physicians to report every case of consumption in their practices. The city inspectors will then be sent to the residence of the patient with printed instructions. Dr. Laberge, M. H. O., intimated that within a short time a special hospital for tuberculosis would be erected either in or near the city.

Personal.—Dr. Augustus Robinson, after half a century's practice and residence at Annapolis, N. S., has decided to remove to the Canadian Northwest, where he intends going into the ranching business.—Dr. Wesley Mills, Montreal, professor of physiology in McGill University, is visiting in British Columbia, and on March 31, addressed the Medical Society of Victoria. The lecturer demonstrated with lantern slides how the more recent methods of studying the anatomic elements of the nervous system had resulted in a great increase of knowledge.

Few Anti-Vaccinationists.—A public meeting was held in Toronto one evening during the past week at which there were no friends of vaccination present. The proceedings began with the introduction of a resolution calling for the repeal of the vaccination act and the abolition of all regulations regarding vaccination as a condition of admission to educational institutions or employment in state departments. It can not be said that the anti-vaccination feeling in Toronto is a strong one, as only 150 people attended the meeting out of a population of a quarter of a million.

Medicolegal Case of Interest in British Columbia.—A charge of drunkenness was made against a Victoria physician who attended a confinement at which the woman died. The counsel for the husband sought a writ of mandamus to compel the College of Physicians and Surgeons of British Columbia to hear and determine a complaint against one of their members. The plaintiff first appealed direct to the medical council, instead of instituting a civil suit, on the ground that while he would not think of accepting any money consideration for the loss of his wife, he believes that the public should be protected from physicians rendered incapable by chronic indulgence in liquor. But the medical council refused to act in the matter,

hence the proceedings before the court. Judgment was reserved.

The Lady Minto Cottage Hospital Fund.—Addressing a number of business men of Ottawa who were gathered at Government House one day last week, Lady Minto explained what had been accomplished in connection with the cottage hospital fund. About \$20,000 had been raised and the districts most in need of hospitals had been assisted. Ten hospitals are now in working order. Four will be opened this spring; and there are now 68 Victorian nurses, of whom some were employed in hospitals and some in district nursing. Lady Minto explained that her object was to raise enough to create an endowment fund of \$5000 a year. Dr. Gibson, honorary secretary of the Victorian order, explained that it was the desire of the Countess of Minto to have the endowment fund raised before her departure from Canada. The capital sum aimed at was \$123,000; and toward that end a few gentlemen in Montreal had already raised some \$36,500. The meeting decided to appoint a committee to begin the work of organization.

FOREIGN.

The German Society of Physicians and Naturalists will hold its seventy-fifth congress at Cassel, September 20 to 26.

The Seventh International Congress of Otolaryngology will be held at Bordeaux, April 1 to 4, 1904. Dr. Lermoyez is the secretary-general and can be addressed at Paris, rue la Boetie, 20 bis.

Congress of Sick Benefit Societies.—The second general congress of the "Krankenkassen" of Germany, at Berlin, March 15, was attended by 1,128 delegates, representing 5,300,000 policy holders.

The Dean of the Profession in France.—Dr. David of Montpellier celebrated his 102d birthday February 10. He retired from practice at 98, but still takes his daily stroll and regular meals. He has an especial reputation for the treatment of anthrax, and patients still come from a distance to consult him.

Charlatans in Germany.—Saxony has 945 charlatans to 1,957 regular physicians, and in some towns the former outnumber the latter. One at Leipsic has been fined \$75 for advertising and selling several "infallible remedies" at exorbitant prices, proved to be merely a mixture of flours, salt, sugar, etc., or ordinary tea, etc.

Osiris Prize at Paris.—A Paris millionaire has endowed a prize of \$20,000 to be awarded every ninth year for some valuable scientific work. The first award has just been made to Dr. Emile Roux, sub-director of the Pasteur Institute, who shares with Behring the honor of the discovery of serum treatment of diphtheria.

Suspension of Botkin's Gazette.—Our Russian exchange, the "Bohnitschnaya Gaseta Botkina," although well in its fourteenth year of publication, announces its impending suspension. This makes the third Russian periodical that has expired this year, the others being the valuable "Russki Arkhiv Pathologie" and the "Vestnik Chirurgii."

Bulletin de l'Institut Pasteur.—Six of the medical men connected with the Paris Institut Pasteur have commenced the publication of a fortnightly periodical. It is intended to be devoted to reviews and abstracts of works on bacteriology, medicine, general biology, biologic chemistry and physiology in their relations with microbiology.

International Health Resort Exposition.—This international exposition is to be held at Vienna September 12 to October 20. Panoramas and views, plastic representations and other interesting details of information in regard to the watering places and health resorts of the world will be exhibited, with displays of the waters, arrangements for sanitation and amusements, etc.

French Physicians Decorated by Emperor William.—The order of the crown, second class, has been conferred on Lannelongue, professor of surgery at Paris, and of the third class on Landouzy, professor of internal medicine. The decoration is a token of recognition of their efforts for science in general and in the prophylaxis of tuberculosis in particular. They were delegates to the Berlin Tuberculosis Conference.

Consent in Emergency Operations.—The military medical authorities at St. Petersburg have notified all the surgeons and hospitals under their jurisdiction that in emergency cases, when it is impossible to secure the consent of the unconscious subject and his family live too far away for their consent to be obtained, the official approval of the physicians of the hospital shall be regarded as equivalent to the consent of the interested parties.

Ethics of Treating the Patient of Another Physician.—A decision of the Prussian Medical Court of Honor in a recent case proclaimed that every physician is entitled to undertake treatment of all who apply to him in his office hours without regard to whether they have already consulted another physician or not. Also that there is no ground for a general obligation on the part of the physician that he must inform himself in regard to whether a patient applying is already under the treatment of another physician. Only when special circumstances arise that indicate previous application for medical aid, is such inquiry called for. When a physician knows that the applying patient is already in the care of another physician, it is obligatory on him to inform the latter that he has taken charge of the case.

The Promiscuity of the Madrid Congress.—The "Semaine Médicale" of Paris has long vehemently protested against the action of the executive committee in charge of the approaching international medical congress, in opening the congress to others besides physicians. "It is not a medical congress," it states, "but a congress of physicians, pharmacists, dentists, veterinarians, midwives, etc., etc." Under these circumstances the "Semaine" announces that, loyal to principle, it will abstain from publishing a report of this congress "for which history will doubtless reserve a blank page." The international congress of the medical press convenes at Madrid two days before the general congress, and the same rulings as to membership have been adopted by the committee in charge. It is open to "journals of medicine, pharmacy, odontology and veterinary surgery." The "Semaine Médicale" also comments with amazement on the fact that the general elections have been appointed for the same week as the congress, by royal decree published March 27. The excitement of a political campaign is not conducive to the success of a scientific gathering.

LONDON LETTER.

Cancer in Ireland.

The increase of cancer in England has been referred to previously in THE JOURNAL. Official figures just published bear out the same alarming result in the case of Ireland. They derive additional interest from the fact that the mode of life in the two countries differs widely. No increase of urban population at the expense of rural, with its associated development of factory life, which, in some indirect fashion, may be supposed to play a part in the increase of cancer, has taken place in Ireland. Since 1864, when the mortality from cancer was 2.7 per 10,000 living, it has steadily risen until 1901, when it reached 6.5. In 1891 it was 4.6 and in 1900 6.1. It varies considerably in the different counties. It is lowest in Kerry (2.54) and highest in Armagh (10.4). In the latter county it is highest in the parts without mountains. The registrar-general issued a memorandum asking for particulars of any cases which might throw light on the origin of the disease. Analysis of the replies yields the following results: 1. In many cases cancer occurs in the same family; grandparents, parents and other relatives suffering. 2. Frequently there is also tuberculosis in the family. 3. It has occurred in those who have used tobacco pipes of persons suffering from cancer of the lip. 4. It has occurred amongst different families living in the same house, simultaneously or successively. Some of these facts point to a contagious origin of the disease.

The Antimonial Poisoning Cases.

The trial and conviction of Severino Klosowski, which has just taken place, discloses one of the most remarkable series of cases of poisoning in the annals of crime, which, moreover, presents points of medicolegal interest. The prisoner is a Pole who came to England in 1888. In 1897, having left his wife, he lived at Hastings with another woman. He purchased from a druggist an ounce of tartar emetic. The woman died in 1898. He then lived with another woman, who soon sickened and died. The symptoms appear to have been the same in both cases—persistent vomiting and exhaustion being the predominant ones. But in the one case the physician in attendance certified that death was due to phthisis, in the other to intestinal obstruction. He then lived with another woman, who soon became fatally ill. Fortunately, the physician who attended the last woman was again called in. His suspicions were aroused by the fact that the symptoms resembled those in the previous case, and he insisted on a necropsy being made. Antimonial poisoning was found to be the cause of death. The bodies of the other two women were exhumed and death in their cases was also found to be due to the same cause. Although one body had lain in the grave four years, it was in a remarkable state of preservation—the effects of antimony. The judge commented

severely on the failure of the physicians to recognize the illness of the women whom they were attending. The only point made by the defense was the absence of motive on the part of the prisoner, for, as he had not married any of the women, he could have got rid of them without killing them. Perverted sexuality seems to be the most plausible explanation.

Rare Form of Deposit (Calcium Carbonate) in Joints.

At the Royal Academy of Medicine in Ireland, Prof. E. H. Bennett showed specimens of a curious deposit he had found in the joints of the body of an aged male used in his class in operative surgery. There was trivial rheumatic arthritis in the joints of the hands and feet, elbows and knees. In the hips, shoulders and sterno-clavicular and temporo-maxillary joints were white markings. There was none in the balls of the great toes, nor any tophi in the pinnae of the ears. Thus the position of the deposits was the reverse of that seen in gout. The murexid test failed to show the presence of uric acid. Chemical examination showed that the deposit consisted of calcium carbonate, which microscopic examination showed was present in the form of rhombic crystals.

The Physical Condition of School Children.

The physical deterioration of the town population, which ever increases at the expense of the country, has given rise to serious forebodings by those interested in the national welfare. A royal commission, appointed to inquire into the physical training of children in Scotland, has just presented its report. The principle that education should consist in training the body as well as the mind, though acted on in the schools of the upper classes and in the universities, is systematically ignored in the state-provided schools for the mass of the population. The commissioners ask for a more comprehensive conception of school life than prevails, and provision of larger playgrounds and exercise halls. They consider that too many subjects are attempted to be taught and that the children are too closely confined to their books.

The Plague in India.

The plague epidemic throughout India is steadily increasing. The deaths last week numbered 25,882, as against 25,870 for the previous seven days, and 12,695 for the corresponding week last year. In Bombay city there were 716 deaths; in Calcutta, 171; in Karachi, 25, and in Poona about 600. The Bombay presidency reported 10,835 deaths; the Madras presidency, 604; Bengal presidency, 2,941; the United provinces, 2,995; the Punjab, 3,581; the Central provinces, 1,203; the Mysore states, 526; the Hyderabad state, 1,640; Central India, 435; and Kashmir, 1,717. The increase is general, but Poona and some other places seem to suffer out of all proportion to the number of the population. During the past fortnight the death rate in Poona has been about 500 per 1,000 per annum. In Calcutta the rate has never reached 100, while even in Bombay it has not exceeded 150 in any of the outbreaks.

Smallpox in Dublin.

There is a smallpox epidemic raging in Dublin just now; no fewer than 53 cases being under treatment.

Correspondence.

Tropical Medicine.

MINNEAPOLIS, MINN., April 8, 1903.

To the Editor:—I note your suggestions on the study of tropical diseases, and I note Dr. Ashmead's reply to your suggestion in THE JOURNAL of April 4. I fully agree with you that the American Medical Association should give special attention to the study of tropical diseases. I do not believe that the Section on Hygiene and Sanitary Science is in itself the proper place for such subjects. They should be studied from the broader field of general medicine. At the same time, the sanitary feature should not be lost sight of, and if a joint meeting could be given by Sections on Medicine and Sanitary Science it would seem that the greatest amount of good might thus be accomplished. You will note that these two sections have arranged for one day's work in joint meeting this year, and we have arranged a program covering diseases that partly, at least, would be looked on as tropical, viz., yellow fever, plague, malaria and typhoid fever. I note that the Section on Medicine is also to have a very thorough discussion of dysentery. I believe that these subjects (communicable dis-

eases) should be studied first in joint meeting. To try to consider them from the sanitary side alone is a mistake. Sanitarians should be in the medical section largely and should be working from that point of view, so far as the American Medical Association is concerned in dealing with these diseases. It would seem to me that a committee might be formed from these two sections to look into this matter of a joint meeting during one day at least of this session of the Association each year. If it appears that the Section on Medicine is too heavily loaded already, then I would certainly feel that there should be a subsection under medicine to have charge of these matters.

I am rather inclined to think that the American Medical Association would get the greatest amount of good out of the Section on Hygiene and Sanitary Science if it were a subsection of medicine.

Very truly,

H. M. BRACKEN.

Osteopathy and Legislation.

NEW YORK, April 10, 1903.

To the Editor:—My recent letter to THE JOURNAL on this subject has brought a number of letters from physicians who have been interested in the matter, and I have received voluminous literature in the way of arguments. Right here lies the weak point in our opposition. Arguments on both sides have been so extensive that they have sometimes become top heavy and have fallen by their own weight, toppling occasionally in the wrong direction. A very able lawyer who presented the interests of the osteopaths before one legislative committee told me afterward that he had no fear of the physicians or of their lawyers, but when he saw the osteopaths slip up on making a demonstration when opportunity was given them to move a few bones, he at once lost faith in his clients and would have nothing more to do with them. He told me that he had taken up their cause in perfectly good faith, and was convinced that he was to be a public benefactor.

If members of a legislative committee object to having specimens from human cadavers placed on the table before them the fresh rack of a sheep will always suffice. The fraudulent nature of the claims of the osteopaths will be so apparent to any laymen when the osteopaths are asked to "show the gentlemen" how they move bones, that the elaborate and convincing arguments on both sides can be dispensed with.

58 West 56th Street.

ROBERT T. MORRIS.

Catgut Preparation.

BANGOR, ME., April 4, 1903.

To the Editor:—As soon as Claudius' method of preparing catgut appeared I carefully prepared some imported gut, Nos. 0, 1 and 2. On trial the gut was brittle and absolutely worthless. The solution is also offensive and black. The same lot of gut was prepared by Hofmeister's method, and is as good as gut can be. The solution is clear and sparkling, and the gut can be boiled without injury. It lasts too long in the tissues, which is a good fault and can be remedied by using the smaller sizes.

WALTER L. HUNT, M.D.,

Visiting surgeon E. M. G. Hospital.

Light on Lupus.

CINCINNATI, April 13, 1903.

To the Editor:—In your issue of April 11 there appeared an article on "Light in the Treatment of Lupus and Other Chronic Skin Affections," to which I wish to offer the following criticism, in order to correct some possible mistaken impressions, and any resulting deleterious influences: The four cases of lupus, reported cured by this method, bear no resemblance to lupus, either from the appearance of the pictures or from the clinical history. The process not only began too late in life, in adults from 21 to 52 years of age, but also pursued an entirely too rapid course, two weeks to one year in each individual case.

M. L. HEIDINGSFELD.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

FETAL MORPHIN ADDICTION.

COLORADO, April 10, 1903.

To the Editor:—Concerning a very peculiar case in my regular work I wish a little information: April 3 I delivered a multipara of a nine pound boy. The mother had been addicted to the use of morphin for the past three years. The child appeared to be healthy and perfect in every respect with excretions normal. On the second day it began to cry, and cried continuously for two days and nights despite the free use of paregoric. At the end of that time the baby had become so weak that I saw no hope for it, but gave 1/120 gr. of morphin and got an immediate quieting effect. The baby is now eight days old and by the use of 1/120 gr. of morphin every other day it has begun to gain weight and strength, but if one dose of morphin is omitted it is immediately attacked with a crying spell and will not stop until it gets its morphin.

Now I would like to know if it is possible for a fetus to contract the morphin habit, and if there is any other similar case on record.

O. D.

ANS.—The case is not an extraordinarily unusual one, as the infant is often affected by the habits of the mother. The child should not be allowed to grow up a morphin habitué, and we advise discontinuing the opiate, carefully studying the symptoms and directing treatment thereto.

LANGENBECK'S TRIANGLE.

WASHINGTON, D. C., April 10, 1903.

To the Editor:—Please inform me where and what is "Langenbeck's triangle."

R. S. PORTER, M.D.

ANS.—It is an isosceles triangle, of which the apex corresponds to the anterior superior iliac spine, the base to the anatomic neck of the femur and the external side to the external face of the great trochanter. Penetrating wounds within this triangle may be intra-articular.

State Boards of Registration.

Amended Nebraska Law.—The medical practice law of Nebraska has been amended by the legislature at its late session so as to make an examination, successfully passed, an essential before obtaining a license. The amended sections of the law now read:

Section 19.—Every holder of a diploma from a recognized medical college within the state of Nebraska, making application for an examination and a certificate under the provisions of this act, shall pay to the board of secretaries prior to his examination the sum of ten dollars (\$10.00). All other persons making such application shall pay to said board the sum of twenty-five dollars (\$25.00). All such fees shall be equally divided among the four secretaries of the board as full compensation for their services and expenses. For the taking of any testimony each of the secretaries shall be entitled to charge and receive such fees as are provided for notaries public for similar services. No part of such fees shall be paid out of the state treasury.

Section 7. It shall be unlawful for any person to practice medicine, surgery or obstetrics or any of the branches thereof, in this state, without first having applied for and obtained from the state board of health a license so to do. Application therefor shall be in writing, and shall be accompanied by the examination fees herein-after specified and with proof that the applicant is of good moral character. Applications from candidates who desire to practice medicine and surgery in any or all their branches shall be accompanied by proof that the applicant is a graduate of a medical school or college in good standing, as defined in Section eight (8) of this Article. When the application aforesaid has been inspected by the board and found to comply with the foregoing provisions, the board shall notify the applicant to appear before it for examination at the time and place mentioned in such notice. Examinations may be made wholly or in part in writing by the board and shall be of a character sufficiently strict to test the qualifications of the candidate as a practitioner. The examination of those who desire to practice medicine and surgery in any or all their branches shall embrace those subjects and topics, a knowledge of which is commonly and generally required of candidates for the degree of doctor of medicine, by reputable medical colleges in the United States. All examinations provided for in this act shall be conducted under rules and regulations prescribed by the board, which shall provide for a fair and wholly impartial method of examination. It is also provided that examinations on practice of medicine and therapeutics shall be conducted by the member or members of the board of secretaries who are of the same school of medicine as the applicant. And it is further provided, that the said state board of health may, at their discretion, admit, without examination, legally qualified medical practitioners, who hold certificates to practice medicine in any state with equal requirement to those of the state of Nebraska.

Section 10. If upon investigation of the proofs submitted to the board, and after the examination, as hereinbefore provided, the applicant shall be found entitled to practice, there shall be issued to said applicant the certificate of said board under its seal and

signed by its secretaries stating such fact, and it shall be the duty of the applicant before practicing to file such certificate or a copy thereof in the office of the county clerk of the county in which he or she resides or in which he or she intends to practice; such certificate or copy shall be filed by the county clerk and by him recorded in a book kept for that purpose, properly indexed, to be called the "Physicians' Register," and for such services the county clerk shall receive from the applicant the same fees as are allowed to the register of deeds for the recording of conveyances.

Montana Report.—Dr. W. C. Riddell, secretary of the board of Medical Examiners of Montana, reports the examination held at Helena, April 7 and 8, as follows: Number of subjects examined in, 10; total number of questions, 50; percentage required to pass, 75; written examination; total number examined, 25; passed, 17; failed, 8.

PASSED.		College.	Year Grad.	Per Cent.
Candl.	Sch. of date. Pract.			
12	H.	Chicago Homeopathic College.....	1901	80.2
9	R.	College of Phys. and Surgs., Chicago.....	1902	76.5
15	R.	College of Phys. and Surgs., Chicago.....	1902	75.2
5	R.	Coll. of Phys. and Surgs., Milwaukee.....	1900	84.2
2	H.	Harvard Medical School.....	1902	82.1
3	H.	Hahnemann Medical College, Phila... ..	1899	79.9
11	R.	Laval University.....	1884	75.1
7	R.	McGill University, Montreal.....	1902	75.1
13	R.	McGill University.....	1895	82.9
8	R.	Northwestern University, Chicago... ..	1897	75.3
1	R.	Northwestern University, Chicago... ..	1875	75.1
6	R.	Rush Medical College, Chicago.....	1900	76.8
16	R.	Rush Medical College, Chicago.....	1902	81.1
14	R.	Rush Medical College, Chicago.....	1901	76.3
4	R.	University of Minnesota.....	1900	82.5
17	R.	University of Michigan.....	1886	85.1
10	R.	Vanderbilt University, Nashville....	1899	80.1

FAILED.		College.	Year Grad.	Per Cent.
Candl.	Sch. of date. Pract.			
20	H.	Boston University.....	1898	67.4
24	R.	College of Phys. and Surgs., Keokuk.....	1875	22.6
22	R.	Coll. of Phys. and Surgs., Kan. City.....	1902	47.3
27	F.	Eclectic Medical College of Maine.....	1883	*
18	H.	Hahnemann Medical College, Chicago.....	1883	31.7
21	H.	Hahnemann Med. Coll., Kansas City.....	1899	58.2
25	R.	University Med. Coll., Kansas City.....	1900	46.1
23	R.	University of Michigan.....	1891	50.4
19	R.	Vanderbilt University.....	1893	56.8

* Refused license because diploma is not recognized by this board. This college was organized in 1881 and its charter was revoked in 1887.

The board resolved to discontinue issuing temporary licenses, and not to reciprocate with any other state before the next meeting, Oct. 6, 1903.

New Jersey Improvements.—The State Board of Medical Examiners of New Jersey has secured amendments to the medical practice act of that state by which the academic standards for admission to the state examinations have been raised from a competent common school education to a diploma issued after four years of study in a normal, manual training or high school of the first grade in that state, or its equivalent. The medical requirements have been increased from three to four courses of medical lectures of at least seven months each, in different calendar years, prior to receiving the degree of doctor of medicine. The amendments go into effect July 4, 1903. After that date candidates for examination or for the endorsement of a license issued by a recognized examining board of another state, will be obliged to comply with the new standard of requirements for a New Jersey license.

Marriages.

JOHN F. SLOAN, M.D., Peoria, Ill., to Miss Mamie McDonough, at Chicago, April 4.

WESLEY T. MULLIGAN, M.D., to Miss Sallie Macy Brewster, both of Rochester, N. Y., April 1.

NICHOLAS IVANOVITCH ARDAN, M.D., to Miss Minnie Cabel Roberts, both of Richmond, Va., April 2.

WILLIAM CHAMPION DEMING, M.D., to Miss Imogen Hawthorne, both of New York City, April 15.

WILLIAM E. VALEN, M.D., Rich Creek, Tenn., to Miss Katherine Louise Cathey of Verona, Tenn., March 18.

Deaths.

George Anthony Collamore, M.D. Harvard University Medical School, Boston, 1859, one of the oldest, most successful and most prominent physicians of Toledo; a member of the American Medical Association; a charter member of the Toledo Medical Society and several times its president and secretary; secretary of the Ohio State Medical Society from 1882 to 1891,

and for the following two years its president; major-surgeon of the One Hundredth Ohio Volunteer Infantry during the Civil War; from 1872 to 1878 coroner of Lucas County; health officer of Toledo in 1876, and from 1887 to 1891, died at his home in Toledo, April 8, from paralysis after an illness of ten days, aged 69.

Albert George Edwards, M.D. Missouri Medical College, St. Louis, 1859, University Medical College, Kansas City, Mo., 1892, formerly president of the Northern Kansas and Marshall County Medical societies, and of the Society of Surgeons of the St. Joseph and Grand Island Railway; member of the American Association of Railway Surgeons; a practitioner of Marysville, Kan., for more than forty years, and a veteran of the Civil War, died suddenly from heart disease at Perry, Okla., April 1, aged 65.

Hiram S. Roberts, M.D. Jefferson Medical College, Philadelphia, 1866; hospital steward of the Eighty-third Illinois Volunteer Infantry in the Civil War; for nearly forty years a practitioner of Manhattan, Kan.; some time president of the Kansas Medical Society, and member of the State Board of Health; formerly surgeon-general K. N. G., died at his home in Manhattan, April 1, from pneumonia, after an illness of ten days, aged 62.

Joseph Stanford Ames, M.D. Berkshire Medical College, Pittsfield, Mass., 1858, died, April 1, from mitral disease at his home in Holden, Mass. He had been a member of the Massachusetts Medical Society since 1860 and had been in active practice in Holden, Mass., for 44 years.

Sheldon Stringer, M.D. Tulane University, New Orleans, 1859, surgeon in the Confederate service during the Civil War; a member of the American Medical Association; member and ex-president Florida State Medical Association, died at his home in Brooksville, Fla., April 7.

John E. Sanborn, M.D. Harvard University Medical School, Boston, 1850, surgeon of the Twenty-Seventh Iowa Volunteer Infantry during the Civil War, mustered out as surgeon-in-chief of the Sixteenth Army Corps, died at his home in Melrose, Mass., April 1, aged 79.

William C. Fritz, M.D. University of Buffalo, 1892, a member of the American Medical Association, who had suffered for four or five years from heart disease, died suddenly in the home of a patient in Buffalo, N. Y., March 31, aged 36.

Charles Lawrence Siegel, M.D. Medical College of Virginia, Richmond, 1891, died at the home of his mother, near Richmond, Va., April 4, from tuberculosis of the throat, after an illness of two years, aged 33.

Joseph F. Harrell, M.D. Castleton (Vt.) Medical College, 1855, a member of the Medical Society of the State of North Carolina, died at his home in Whiteville, N. C., March 31, aged 70.

William B. Town, M.D., one of the oldest practitioners of Lenawee County, Mich., died at his home in Geneva, April 1, after an illness of several years, from dropsy and heart disease.

August Negenand, M.D. Philadelphia College of Medicine and Surgery, 1854, died at his home in Wilmington, Del., from paralysis, March 31, after an illness of three days, aged 79.

Edgar Perry, M.D. Harvard University Medical School, 1898, a member of the Massachusetts Medical Society, died at his home in Boston from paralysis, April 8, aged 48.

J. H. Bryant, M.D., formerly a resident of St. Paul, Minn., died at his home in Los Angeles, April 5, from cerebral embolism, after an illness of five days, aged 69.

E. H. Williams, M.D. Medical College of the State of South Carolina, Charleston, 1879, died at his home in Walterboro, S. C., March 31, from apoplexy, aged 45.

Reinhard H. Weber, M.D. Jefferson Medical College, Philadelphia, 1866, died suddenly from apoplexy at his home in Philadelphia, March 30, aged 59.

Russell P. Fay, M.D. New York Homeopathic Medical College and Hospital, 1887, died at his home in Yonkers, N. Y., from pneumonia, March 30, aged 39.

E. Darwin Ayres, M.D. New York University, 1852, died at his home in Little Rock, Ark., April 8, from paralysis, after an illness of five days.

Alfred L. Murtha, M.D. Baltimore University School of Medicine, 1901, died at his home in Brooklyn, N. Y., from pneumonia, March 22, aged 25.

I. H. Hand, M.D. Reform Medical College of Georgia, Macon, 1851, died at his home in Leary, Ga., March 22, from heart disease, aged 80.

William G. Allen, M.D. Albany (N. Y.) Medical College, 1857, died at his home in Mansfield, Mass., April 5, after a long illness, aged 69.

A. G. North, M.D. Atlanta (Ga.) Medical College, 1879, aged 47, was struck by a train at Hampton, Ga., March 29, and instantly killed.

William D. Hutchings, M.D. Indiana Central Medical College, Indianapolis, 1851, died suddenly at his home in Madison, Ind., April 3.

John MacLay, M.D. Jefferson Medical College, Philadelphia, 1882, died suddenly at his home in Richmond, Kan., April 5, aged 55.

J. L. Rowland, M.D., a surgeon on the Federal side in the Civil War, died suddenly at Salyersville, Ky., April 4.

John W. Hodgkinson, M.D., formerly a well-known physician of Toronto, died in that city January 29, aged 78.

John A. Edmiston, M.D. Rush Medical College, Chicago, 1866, died at his home in Clinton, Ill., April 5.

Stephen R. Gray, M.D., died recently at his home in Lansingburg (Troy), N. Y.

Deaths Abroad.

Francesco Randacio, M.D., professor of normal human anatomy in the University of Palermo, Sicily, died from cerebral hemorrhage, February 23, aged 81. He was graduated from the University of Turin in 1853, and two years later began his life work as a teacher of anatomy. He rendered inestimable service to the city of Palermo during the cholera epidemic of 1866 and 1867, at which time he was sanitary director of the city. In appreciation of his work, he was given a silver medal by the municipal authorities.

Miscellany.

Books Without Indices.—A writer in the "New York Medical Journal" expresses "grievous disappointment" over a text-book which "has not even the pretense of an index." He considers that it is "an imposition on an unsuspecting purchaser to offer for sale a scientific work which has absolutely no index at all." He is right.

Exploration Justified.—Let us put this question to the practitioner of medicine: Can you cure a case of cancer of the stomach? If not, why withhold the only known means of effecting such a cure—a surgical operation? Again, let us ask, can you diagnose a case of cancer of the stomach early enough for surgical relief? If not, why withhold an exploration, the only certain means of diagnosis.—W. J. Mayo.

Association News.

THE NEW ORLEANS SESSION.

QUOTATIONS FROM OTHER JOURNALS CONCERNING THE PROSPECTS FOR A GOOD MEETING.

The "Fort Wayne Medical Journal-Magazine" says: "The coming session of the American Medical Association should be, and we believe will be, one of the largest in the history of the organization. There are many reasons why this should be so. . . . New Orleans is the metropolis of the south, and contains many things of more than usual interest. The time of the session is the most pleasant of the year. To the northern contingent especially, the prospect of warm sunshine, balmy air, fragrant flowers and green leaves after a winter of more than usual vigor, accompanied by a scarcity of fuel, will be unusually pleasing. That the session is to be held in the south, the hospitality of whose people is proverbial, is a sufficient guarantee that the social features will equal, if not surpass, those of previous sessions."

The "New Orleans Medical and Surgical Journal" says: "From all accounts, the New Orleans session promises to be well attended, and from no section more than the south should this be true. For the future of local organization, for the future of protection against the enemies of an ideal profession, the medical men of the south should come and drink deeply of the spirit which is always a part of such a crystallization of

science and advancement as the national body represents. New Orleans is ready to receive all that come, and if those from far away find us lacking in some things, we will have a warm enough heart to make compensation in others. The Arrangements Committee have made such preparations as their inexperience will have permitted, and the 'Journal,' for them, for the citizens of New Orleans and for the medical profession of the city and state, bids every medical man and member of the American Medical Association welcome."

The "New York Medical Journal" says: "The attractions of New Orleans as a place of meeting warrant most amply the presumption that the assembly to be held there in May will be largely attended. The work of the sections, therefore, it may be assumed, will be quite up to the standard that their previous labors at large sessions have set. The orators who have been chosen to deliver formal addresses before the Association at large are men to whom their professional brethren always listen with pleasure and profit." The editor says, further, that, from the scientific aspect, "there need be no doubt of the entire success of the occasion."

RAILROAD RATES.

ADDITIONAL ANNOUNCEMENTS CONCERNING RATES, ROUTES AND SPECIAL TRAINS.

The "Medical Limited."

Confirming the preliminary announcement in the New Orleans Number of THE JOURNAL: The Chicago Medical Society has chartered a special train to New Orleans over the Illinois Central Railroad, to leave Sunday, May 3, at 11 a. m., and to arrive in New Orleans the following morning. The rate, as we have announced, will be one fare for the round trip, \$23. Particulars as to extension of tickets to May 30 were given in THE JOURNAL of last week. Reservations may be made by addressing the Secretary, Dr. Frank X. Walls, Room 910, 103 State St., Chicago. Reservations for all other Illinois Central trains should be made at 99 Adams St., Chicago. The same rate and time limit applies to all trains from Chicago.

Excursion to Cuba.

Further announcement of the Cuba excursion states that physicians and members of their parties will not be subjected to quarantine regulations on their return from Cuba, but if it is deemed necessary by the resident physician, the baggage will be inspected and disinfected. A rate of \$50 for the round trip is granted by the Southern Pacific Company to physicians and their families and it is not necessary that any certain number go to secure this rate. The capacity of the ship is limited. The vessel is scheduled to leave New Orleans for Havana every Saturday at noon, returning, it leaves Havana Tuesday and arrives in New Orleans Thursday.

Mississippi River Excursions.

Further particulars from members who have endeavored to arrange a Mississippi River excursion indicate that from the vicinity of Philadelphia, no arrangement has yet been made.

To New Orleans by Sea.

Another route to New Orleans, part by sea and part by rail, is announced as follows: From New York to Savannah via the Ocean Steamship Company, then by rail to New Orleans and returning by the same route; \$35.00 for the round trip, on steamers leaving New York, April 28 and 30 and May 2, the limit of return being May 14. Tickets may be extended to the final date of May 30, by arrangement with Mr. Joseph Richardson, 204 Camp St., New Orleans, exactly as already described for the other railroad rates and detailed in THE JOURNAL last week. This rate includes meals and stateroom while on the steamer. Passengers may be accommodated from Boston and New England by a steamship of this same company from Boston to New York, at which latter city a change of boats will be necessary. Particulars may be had of the Ocean Steamship Company by addressing Mr. E. H. Downing, 20 Atlantic Ave., Boston, or W. C. Becker, C. P. T. A., 317 Broadway, New York.

Judicial Council.

One of the parlors of the New St. Charles Hotel has been reserved for the meeting of the Judicial Council.

To Visit Lepers' Home.

An invitation has been extended to members of the American Medical Association by the board of control of the Leper Home near New Orleans to inspect the arrangements for segregation and cure of lepers.

Halls and Meeting Places.

The Section on Ophthalmology will have a separate room for an exhibit of specimens and another for a commercial exhibit of instruments. These will be in the College of Pharmacy, where the meetings of the section will be held.

Light stereopticons will be used at the different section meetings.

Names of New Orleans Visitors Wanted.

Dr. Isidore Dyer, 124 Bienville street, New Orleans, chairman of the Committee of Arrangements, is anxious to hear from those expecting to attend the session, as to name, whether accompanied by ladies and how many in what section the one reporting intends to register, and whether rooms have been engaged, and, if so, where.

Louisiana State Meeting Gets Rates

A rate of one fare for the round trip has been granted by the Southeastern Passenger Association and by the Southern Pacific Railroad to the meeting of the Louisiana State Medical Society. The tickets will be on sale beginning April 27, and will extend over the American Medical Association session, being good till May 30 if specially extended at 204 Camp Street, New Orleans, as described in *THE JOURNAL*, April 11, p. 1001.

Smoker for Surgeons.

Instead of the usual annual banquet of the Section on Surgery an informal smoker will be given Tuesday evening, May 5, at the clubhouse of the Young Men's Gymnastic Association and under the auspices of the club. It is the wish of the local fraternity that every member of the Association who is specially interested in the Section on Surgery come to New Orleans for the first day of the meeting and attend this smoker, where it is hoped that the members may become more intimately acquainted. A unique and pleasing vaudeville entertainment will be given, and the privileges of this excellent clubhouse will be extended to the members of the Section. The local surgeons expressed a wish to make this their affair, but this being contrary to the established precedent of the Association, they are content to see that everyone who attends has ten dollars' worth of fun for two dollars.

Medical Organization.**Florida Adopts Association Plan in Full**

ST. AUGUSTINE, FLA., April 10, 1903

At its annual meeting, held at Tampa in 1902, the Florida Medical Association, by formal resolution, committed itself to the plan of reorganization of the American Medical Association in general terms, but, as the constitution and by-laws for state societies had not then been completed and published, no attempt was made to put it in operation during the year.

At its meeting held at St. Augustine, April 8 to 10, 1903, the constitution and by-laws were adopted in full, after extended consideration and discussion, both in committee and before the whole association, as it was believed that the plan in its entirety could be adapted easily to conditions in Florida.

An exceptionally strong council was selected to serve for one year, or until the House of Delegates for next year could take action, consisting of the following members: First District, Dr. J. Harris Pierpont, Pensacola; Second District, Dr. Henry E. Palmer, Tallahassee; Third District, Dr. William R. Chalker, Lake City; Fourth District, Dr. William L. Hughlett, Cocoa; Fifth District, Dr. Jay H. Durkee, Jacksonville; Sixth District, Dr. James H. Hodges, Gainesville; Seventh District, Dr. Joseph N. Fogerty, Key West; state at large, Dr. Richard P. Daniel, Jacksonville.

The council organized immediately with Dr. J. Harris Pierpont, the retiring president, who has taken a very active and

intelligent interest in the work of organization, as chairman, and Dr. Joseph N. Fogerty, secretary. The state was divided into convenient councilor districts, and an active plan of campaign mapped out.

The officers of the association are: president, Dr. De Witt Webb, St. Augustine; vice presidents, Drs. John Mac Diamond, De Land, and Joseph N. Fogerty, Key West; secretary and treasurer, Dr. J. D. Fernandez, Jacksonville; and librarian, Dr. Edward N. Liell, Jacksonville.

Florida has been one of the dormant states in the past, practically without medical legislation, or the unity of purpose necessary for this or any other reform, but in no other state visited have I met a more active, alert and progressive membership, mostly young men, and it is confidently predicted that they will give such an account of themselves, as they promised to do, as will place their state in the first rank of an organized profession. (Signed) J. N. McCormack.

Trimble County (Ky.) Medical Society.

This society was organized last week with Dr. Jesse C. Hancock, Bedford, president, and Dr. Louis G. Contri, Winona, vice president.

Washington County (Ky.) Medical Society.

The physicians of this county met last week and with the aid of Dr. Robert C. McChord, Lebanon, organized a county society, with Dr. Daniel O. Pohn, president, and Dr. J. H. Lumpkin, secretary, both of Springfield.

Dickson County (Tenn.) Medical Society.

The physicians of the county met at Dickson, March 30, and organized a county society on the lines suggested by the American Medical Association. Dr. William S. Scott was elected president, Dr. W. W. Walker, secretary, and Dr. Edward Ridings, delegate to the state society, all of Dickson.

Gallatin County (Ky.) Medical Society.

This society was organized recently with the aid of Dr. Louis Frank, Louisville, councilor for the Fifth District, with Dr. H. S. Rowlett, Warsaw, president, Dr. E. E. Bickers, Sparta, vice president, and Dr. James M. Stallard, Sparta, secretary-treasurer.

Oldham County (Ky.) Medical Society.

This society was organized with the aid of Dr. Louis Frank, Louisville, councilor for the Fifth District, with the following officers: Dr. Alonzo M. Morrison, Goshen, president; Dr. Richard B. Cassady, La Grange, vice president; Dr. George P. Boone, Beard, secretary and treasurer; and Dr. John H. Speer, Brownsborough, delegate.

Barren County (Ky.) Medical Society.

Dr. Arthur T. McCormack met the physicians of Barren County at Glasgow, April 12, and organized a county society, with an initial membership of 14 and a promise of at least 10 more. Dr. S. T. Purcell was elected president, Dr. Joseph S. Leech, vice president, Dr. Richard E. Garnett, secretary-treasurer, and Dr. Samuel T. Botts, delegate, all of Glasgow. Drs. William T. Butt, Temple Hill, and Flavius J. Taylor and A. Mazetta Rowe, Glasgow, were elected censors.

Marshall County (Ky.) Medical Society.

The physicians of Marshall County met at Benton, March 25, and organized a county society, adopting the constitution and by-laws prepared by the American Medical Association without change. Dr. William S. Stone, Birmingham, was elected president, Dr. E. G. Thomas, Harvey, vice-president, and Dr. Van A. Stille, Benton, secretary and treasurer. The belief is expressed that every registered physician in the county will become a member before the meeting of the state association.

Fulton County (Ky.) Medical Society.

The physicians of Fulton County held a meeting at Fulton, April 3, to consider county organization. After an address by the president of the state association, Dr. W. W. Richmond, Clinton, a society was formed, and the constitution and by-laws formulated by the American Medical Association were adopted.

diseases, he would receive no benefit. The same is true with reference to accident insurance. Accidents received under certain circumstances result in certain benefits; received under other circumstances, receive other benefits. The physician can not determine what statement of his might be injurious to a patient.

In other words, it is not within the province or the power of the physician to determine the "peculiar circumstances" now mentioned in the Code of Ethics, as prescribed by the American Medical Association. The only safe proposition is for the physician to take the position that inviolate secrecy must always be preserved, and that the patient is the one to determine whether the peculiar circumstances exist that justify a disclosure.

I may be suffering with typhoid fever; somebody meets my physician on the street and says: "I understand Mr. S. is sick." "Yes." "What is the matter with him?" The physician, after resolving in his own mind the proposition that typhoid fever carries with it no stigma, thinks that it is all right to answer it, and says: "Why, he has typhoid fever." The physician may be wrong. He has heard of several instances where physicians did not make a correct diagnosis of a disease. The man he was talking to may be some sort of agent for a health insurance company. I may claim, and it may afterwards develop, that the disease was some other kind of a fever, or some other kind of a disease, accompanied by a fever. My health insurance policy may give me certain benefits if the disease is not typhoid fever, and may not cover typhoid fever at all.

He maintains that it should be exactly, in the case of every ailment, the same as with that of an abortion, or the same as where a person is afflicted with certain diseases which carry with them public contempt—the physician's mouth should be absolutely closed; and, however difficult it may be under existing conditions for a physician to avoid making certain disclosures, in my opinion the entire medical profession should take an absolute stand that a physician should never disclose anything learned from the patient in a professional capacity. It would not take the public long to become educated if physicians would be the instructors. However innocent, however simple, the matter may be, when I propound the question to you, "What is the matter with Jones?" in my opinion your answer should be, however it may be framed, in substance this: "I am Mr. Jones' attending physician, and it is not proper that I should say anything in response to your inquiry."

Another very interesting proposition, as applicable to the matter under discussion: Suppose the patient dies, is the privilege waived by the death of the patient, or can the privilege be waived by any personal representative of the patient? The interest of this matter will be readily seen.

So far as the ethics of the situation are concerned, it is very clear they can not be changed by the death of the patient, and so far as the law is concerned, the situation is not changed.

In a very well considered case the following reasoning is used:

It is thus seen that clergymen, physicians and attorneys are not only absolutely prohibited from making the disclosures mentioned, but that by an entirely new section it is provided that the seal of the law placed upon such disclosures can be removed only by the express waiver of the persons mentioned. Thus, there does not seem to be left any room for construction; the sections are absolute and unqualified. These provisions of law are founded upon public policy, and in all cases where they apply, the seal of the law must forever remain until it is removed by the person confessing, or the patient, or the client. The purpose of the laws would be thwarted, and the policy intended to be promoted thereby would be defeated, if death removed the seal of secrecy from the communications and disclosures which a patient should make to his physician, or a client to his attorney, or a penitent to his priest. After one has gone to his grave, the living are not permitted to impair his fame and disgrace his memory by dragging to the light communications and disclosures made under the seal of the statutes. An executor or administrator does not represent the deceased for the purpose of making such a waiver. (*Westover vs. Aetna Life Insurance Co.*, 1 N. E., 104.)

THE NEED OF MORE RIGID LAW.

CHARLES R. BROCK, Esq., said: I recognize fully the rule applicable to the physician, lawyer and clergyman with respect to confidential communications and yield to no man in my respect for that rule and its attendant obligations. This rule,

however, may be modified by statute. If the physician finds that his patient has smallpox, diphtheria or other contagious disease, his duty to the public, imposed on him by law, removes his obligation of secrecy and requires him to report the existence of the disease to the proper authorities. This exception to the rule which seals the mouth of the professional man with respect to facts learned in the confidence of his professional duties is by virtue of a statute, but the statute itself is based on the principle of public policy. As the law now stands, I have no criticism to make of the excellent paper which has been read; but if the information received to-night from both the clergy and the physicians, that the crime of abortion is the greatest evil in our land, is correct, then the law ought to be changed. A statute should be enacted which would require the physician to report to the proper authorities every case of abortion that comes under his observation. If the law requires him to do this, his duty will be known by the patient before he is called, and the discharge of that duty can not, by any ethical principle, be regarded as a breach of confidence.

In view of the alleged enormity of this evil it will not be out of place to compare briefly our statute with the common law on the subject.

The statute is an improvement to the extent that it makes it an offense to commit or attempt an abortion at any period of gestation. At common law an abortion, committed with the consent of the mother, before the child had quickened in the womb, does not appear to have been a crime at all; if committed after the child had quickened, it was a high misdemeanor and, in certain circumstances, was held to be murder. Our statute makes it a felony either to commit or attempt to commit abortion at any time, but the punishment is inadequate, as confinement in the penitentiary for the shortest period of time satisfies the statute. The statute ought to be amended so as to fix a minimum term of say two years, with a maximum term of four or six years for attempting the offense at any period of gestation or for its commission prior to quickening. Its commission after quickening should be murder.

THE ATTITUDE OF THE PROFESSION TOWARD ABORTION.

DR. EDMUND J. A. ROGERS said that the attitude of the profession toward abortion is well known, and he emphasizes the protest against the too common crime. The standard of any people's civilization may be judged by the degree in which they recognize the right of each individual to life, liberty and happiness. Just as truly as an individual personal being comes into existence at the moment of conception, so does that individual at that moment become an integral member and ward of the entire community. The popular ideas prevailing where one receives his education illustrate the force of environment on weak and susceptible minds. We sometimes find even the medical man who has in his younger days become accustomed to the knowledge of the practice of this debasing custom—appears only half-hearted in his protests against it; while in a community where it is of rare occurrence the bare suggestion of it brings sensation of horror and disgust to all. Motherhood should always be honorable, and a social system which tolerates without condemning look the wholesale destruction of the progeny of the human race, but marks with unceasing shame the unfortunate mother, chiefly because she has not murdered her offspring, is not a condition of even respectable civilization. He considers that unfortunate woman who heroically faces the world and brings into her companionship the child of her misfortune a saint beside the misguided and cowardly married woman who through mistaken selfishness and perverting influences destroys her own unborn child. She not only undermines her own domestic happiness and deprives the state of a prospective useful citizen, but, saddest of all, she robs herself of some part in that only solace of the shadowed days of advanced life—the joy in the being of our offspring, and instead substitutes the haunting dreams of what might have been.

REMEDIES.

DR. H. G. WETHERILL, in discussing remedies, said that none is possible for the complete wiping out of the crime, but it can be minimized through educational methods.

1. The immorality and criminality of the act must always be made plain, and especially the dangers to life and health should be pointed out.

2. Tolerance of the practice and altogether erroneous ideas of its fearful results are encouraged by the shamelessly open advertisements of abortifacients and of abortionists in our family papers. Through organized effort and moral suasion or compulsion this should be prevented. Since the result of such advertisements in many instances is a murder of some misguided woman or defenseless child, the advertising agent is in fact and should in law be held as accessory.

3. Enforce the law now on the statute books, or have one enacted that can be enforced.

4. Create a sentiment against the crime, the possibilities of which is illustrated by the influence of the Catholic church and the history and traditions of the Jews, among which people it is a rare crime.

5. Have educational articles on various topics of public interest and value published in the daily papers under the direction and with the indorsement of this society. This would, to some extent, counteract the vicious influence of the criminal advertisements.

6. Establish and maintain good maternity hospitals for the care of pregnant women and girls.

At the end of this paper Dr. Wetherill read some twenty-three advertisements, the meaning of which could not be misunderstood, which he had clipped from three Sunday morning papers of February 1, 1903.

H. H. HAWKINS, Esq., said he spent some time in investigating the legal phases of the matter and especially the actual operation of the law in the state of Colorado. The records at the state penitentiary show the following convictions and terms of sentence: In 1871, 1 case, 1 year; 1883, 1 case, 2 years, 10 months; 1888, 2 cases, 24 hours and 30 days, respectively; 1892, 1 case, 3 years. If the physicians are correct in their statements as to the extent of numbers of these criminal operations, it must be clear that the actual working of this is a farce. No wonder that the city of Denver swarms with abortionists. Five abortionists have been sent to the penitentiary in over thirty-four years—one of them for 24 hours and another for 30 days. The records of one case show that the girl upon whom the abortion was committed died. For this the defendant was sent for one year to the penitentiary. He could not find the record of the other four. He understands that no one is prosecuted in Colorado for abortion except where death occurs. This means that, as actually administered, the law only applies to the man who is so unskilful as to kill his patient. A skilful abortionist is immune from punishment. No abortionist has been sent to the penitentiary in over ten years. He has looked up the records of the criminal court in the city of Denver and has compiled a list of all prosecutions begun in the past thirty years, with the following result: In 1889, 2 cases, released without trial; 1887, 3 cases, one 24 hours in penitentiary, one 30 days, and one not arrested; 1901, one case, three years in penitentiary; 1892, one case; 1894, three cases; 1898, four cases, all of which were released without trial; 1902, one case, forfeited his bond, and the other is pending. In two of the cases that have been released without trial the defendants admitted their guilt and were allowed to go without punishment. Is it any wonder that abortionists fearlessly print their advertisements? He does not find the fault in the law itself, although he admits it could be improved. Some states, for instance, require the presence of two physicians in cases where abortion is indicated, and other states provide punishment for the woman who submits to an operation. Neither of these provisions is on the statutes of the State of Colorado. An amendment, also, might be made that a physician convicted of abortion should be forever barred from practicing his profession. He thinks that publicity is a remedial measure. Physicians are called to treat women after abortions. A law should be passed requiring them to report such cases to the authorities. He thinks the fault lies with the state of public sentiment. The prosecuting officers enforce only the laws which public sentiment demands

should be enforced. The great majority of people justify the commission of abortion; that an unmarried woman should not be publicly disgraced, nor should a child be permitted to be born to which the stigma of bastardy will be attached. The people don't feel harshly toward an abortionist. Public sentiment must be aroused. That abortionists exist, thrive and prosper in Denver is the fault of the physicians. If you will appoint a grievance committee, and it will act fearlessly in all cases brought for investigation before them, the criminal abortionist will leave Denver for other pastures. This committee would see that these advertisements read to-night should cease. The law is ample on the subject. This committee would furnish information to the prosecuting officers and aid them in procuring conviction. Having back of it the influence of the hundreds of good physicians in this city, the committee would be a great power for good. One member of the medical profession said here to-night that a physician did not feel called on to act as a policeman. The legal profession has found such a position a mistake. Every profession needs its policemen, and that is exactly what the members of our legal grievance committee are until the medical profession appoints its police force and puts it to work. I submit that you have no right to complain that you have in your ranks quacks and abortionists.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Acne.

H. W. Stelwagon, in Text-book of Applied Ther., states that the most valuable remedies in the external treatment of acne are sulphur, salicylic acid, resorcin, boric acid and the mercurials. Sulphur may be applied as follows:

R. Sulphuris precip.	3ss-ii	2-8
Ung. aquæ-rosæ	3i	30
M. Ft. unguentum. Sig.: Apply locally; or:		
R. Sulphuris precip.	3ii	8
Pulv. tragacanth.	gr. xx	130
Spts. camphoræ	3ii	6
Liq. calcis	3ii	60
Aq. destil q. s. ad.	3iv	120
M. Ft. ung. Sig.: Apply locally.		

In cases where the skin is oily, an alcoholic lotion containing sulphur as the active ingredient is recommended:

R. Sulphuris precip.	3ii	8
Spts. etheris	3ss	15
Alcoholis	3iiss	105
M. Sig.: As a local application.		

Threadworms.

Injections per rectum should be employed to dislodge the worms and to destroy the eggs which are imbedded there. Aqua calcis is recommended as an efficient remedy in some cases or a saline solution in the strength of two or three drams to the pint of water. Quassia is one of the old-time remedies in destroying these worms, used in the form of a decoction made by boiling an ounce of quassia chips in a pint of water. Before giving this injection the bowel should be thoroughly washed out with soap and water. The quassia solution should be introduced slowly, with the patient lying on the back and the hips elevated.

Some authors recommend the following combination in young children:

R. Naphthalin	gr. x-xv	.65-1
Olei olivæ	3i	30
M. Sig.: As an injection.		

Locally, the parts should be thoroughly cleansed and some antiseptic ointment applied. Some of the mercurial ointments serve this purpose and diluted in strength with lanolin or vaselin may be introduced with the finger to the inner side of the rectum. This is said to relieve the itching better than any

other preparation. Suppositories of iodoform are of similar value in relieving the excessive itching.

As to the internal treatment the best remedies are probably santonin, thymol and rhubarb. The following combination has been recommended in this connection:

R. Pulv. rhei	gr. vi	40
Mag. carb.	3i	4
Pulv. zingiberis	gr. i	06

M. Ft. chart. No. vii. Sig.: One powder two or three times a day.

Ascaris Lumbricoides.

The round worm or ascaris lumbricoides, inhabiting as it does chiefly the small intestine, requires more especially internal treatment for its destruction and dislodgment. Santonin is regarded as the best preparation. It may be given in powder form as follows:

R. Santonin	gr. ii	12
Hydrarg. chloridi mitis	gr. i	06
Sacch. lactis q. s		

M. Sig.: At one dose at bedtime or in solution according to Yeo as follows:

R. Santonin	gr. vi	40
Olei ricini	3iv	15
Syr. aurantii	3iii	12
Mucil. acaciae	3vi	24
Aquæ carui q. s. ad.....	3vi	180

M. Sig.: Take one-half of the amount in the morning while fasting.

The oil of chenopodium was formerly used a great deal. It may be given in a mixture similar to the following:

R. Olei chenopodii	m. viii	50
Olei ricini	3ss	2
Mucil. acaciae	3iii	12

M. Sig.: One teaspoonful three times a day before meals.

Acute Gastritis.

In the treatment of acute gastritis the following outline of treatment is recommended by Yeo in "Clin. Ther.":

1. Remove from the stomach any irritating substances that may be retained.
2. Give the inflamed stomach rest as complete as possible.
3. Administer only fluid, easily absorbed, unirritating and in small quantities at a time.
4. Apply measures to relieve the pain, hyperemia and irritation of the gastric mucous membrane, prevent morbid decomposition of the ingesta and correct excessive acidity when present.
5. Observe strict dietetic rules during and after convalescence.

In order to remove the contents of the stomach the stomach pump should be used. When there are objections to its use the author advises an emetic. He recommends pulverized ipecacuanha in doses ranging from gr. 5 (.30) to gr. 20 (1.30) according to age, given in from one to four tablespoonfuls of water. In other instances he recommends a hypodermic injection of apomorphin gr. 1/24 (.0025) to gr. 1/12 (.005). A suitable cathartic sometimes acts nicely in emptying the stomach. In children an aperient containing gr. 10 (.65) to gr. 20 (1.30) of the compound rhubarb powder is recommended, and in adults one or two drams of Carlsbad salts dissolved in warm water and given twice a day.

In order to carry out the second point in the outline of treatment the author recommends entire abstinence from food for two or three days. Nutrient enema may be given, the patient kept in bed and allowed to sip ice water occasionally. In less severe cases mild nutritious fluids may be given by the mouth, in doses of a few spoonfuls every hour. This should consist of equal parts of milk and lime water or milk and Vichy water or one or two tablespoonfuls of thin arrowroot water three or four times a day. In febrile cases with local pain leeches are sometimes applied locally to the epigastrium and a poultice applied after the leeches have been removed. As a substitute cold compresses or the ice bag should be placed to the epigastrium. A mustard poultice is sometimes recommended and is more agreeable to the patient than cold.

To relieve the pain after the contents of the stomach have been removed the following is recommended:

R. Bismuthi salicylatis	gr. xxx	2
Ext. opii	gr. ii	12
Acidi hydrocyan. dil.	m. xviii	120
Sodii bicarb.	3i	4
Mucilag. tragacanth.	3i	30
Aquæ q. s. ad.....	3vi	180

M. Ft. mistura. Sig.: Two tablespoonfuls every three or four hours.

When there is great tendency to vomiting not accompanied by much local pain the following is of service:

R. Sodii bicarb.	3iii	12
Aq. laurocerasi	3iv	15
Aquæ q. s. ad.....	3viii	240
M. Ft. mistura; and:		
R. Acidi tartarici	3ii	8

M. Ft. chart. No. viii. Sig.: One powder to be dissolved in a tablespoonful of water and added to two tablespoonfuls of the mixture and drunk while effervescing. This may be repeated every hour or two.

Colbeck recommends the following combination to be employed in the treatment of acute gastritis:

R. Bismuthi subnit.	gr. xii	75
Sodii bicarb.	gr. xv	1
Acidi hydrocyanici dil.	m. iii	20
Spts. chloroformi	m. xv	1
Aquæ q. s. ad.....	3i	30

M. Ft. mistura. Sig.: Shake and take two tablespoonfuls before meals three times a day. The bismuth and hydrocyanic acid are both sedatives to the gastric mucous membrane. The author in some cases advises the addition of magnesium sulphate to the foregoing combination in order to overcome the constipating effect of the bismuth.

When the pain is exceedingly troublesome the following combination is recommended:

R. Liq. morph. hydrochlor.	m. v-viii	30-50
Acidi hydrocyanici dil.	m. iii	20
Sodii bicarb.	gr. x	65
Aquæ chloroformi q. s. ad.....	3ss	15

M. Ft. mistura. Sig.: One tablespoonful to be taken every four to six hours.

Where effervescing draughts are better borne the following combination is of service:

R. Sodii bicarb.	gr. xx	130
Aq. destil.	3i	30
M.		
R. Acidi tartarici	gr. xv	1
Aq. destil.	3i	30

M. Sig.: Mix the two solutions and drink while it is effervescing

After evacuating the stomach with a siphon and cleansing the membrane with a solution of warm water, the following antiseptic solution may be used, in a similar manner, to wash out the stomach:

R. Thymol	gr. vi	40
Acidi borici	3iv	15
Aquæ destil.	Oi	480

M. Sig.: To be introduced and withdrawn through the stomach tube.

"Merek's Archives" recommends the following to relieve an attack of acute gastritis:

R. Ichthyol	3iss	6
Tinct. opii	3i	4
Bismuthi subcarb.	3iss	6
Syrupi simplicis	3iv	15
Aquæ menth. pip. q. s. ad.....	3iv	120

M. Sig.: One dessertspoonful in water before meals.

Ewald states, in the treatment of acute gastritis, that tartar emetic and ipecacuanha should never be employed except in children. As to diet, the author recommends absolute rest for the first and second day or only strained barley or rice water or weak tea. On the third day the patient may be given a bread soup composed simply of bread and hot water, oatmeal or barley gruel, rice soup and perhaps one soft boiled egg. On the fourth day meat may be added once a day and thereafter a slow return to the usual bill of fare. Constipation must be corrected by giving one large dose of calomel, gr. x (.65) to

gr. xv (1.00). He especially recommends this procedure in the febrile form of acute gastritis. If no fever is present a seidlitz powder or a good dose of magnesium citrate will be of proper service.

Medicolegal.

Harmlessness of Desired Examination Not Material.—During the trial of the case entitled *Chicago and Eastern Illinois Railroad Company vs. Stewart*, brought by the latter party to recover for personal injuries, the company asked that he submit to a personal examination by a physician to be selected by the court. He refused. Then the company, by questions and offer, attempted to prove that such an examination would not be injurious to him. Objections to such questions and offer were sustained, and the Appellate Court of Illinois, First District, holds that these rulings were right. It says that the party had refused to be then examined. The court had no power to compel him to submit to an examination. The incident was closed. Whether or not, in the opinion of the physicians, such an examination would be harmful to him, became and was wholly immaterial.

Right of Action for Services of Health Officer.—By section 2,060 of the Kentucky statutes physicians appointed as health officers for cities, towns, and counties shall receive reasonable compensation for their services, to be allowed by the councils, trustees, or county courts of the cities, towns, and counties, and to be paid as other town or county officers are paid. In the case of *Hudgins vs. Carter County* the former alleged in his petition that, as health officer, he performed certain services during an epidemic of smallpox and presented his claim to the fiscal court, and the court failed to allow him anything thereon. The Court of Appeals of Kentucky says that the law as heretofore construed by it required him to first present his claim to that (the fiscal) court for an allowance, and, if not allowed, or if the allowance was unsatisfactory, then the claimant had either of two remedies—first, to appeal from the action of the fiscal court; second, to bring his action, that is, sue for his claim. But in this action he could not claim for anything more than the amount of the claim alleged to have been presented to the fiscal court for allowance, as in the opinion of the appellate court the presentation of the claim to the fiscal court for its allowance is a prerequisite to any action; also he could not recover against the county for services and medicine rendered and furnished to persons who were able to pay for same. He could only recover for his services and medicines rendered and furnished to indigent persons, and for services and general supervision rendered by him which was necessary or reasonably necessary to quarantine and keep the smallpox under control and prevent the spread of the disease, and for attention to those quarantined.

Physical Examination—Privilege Extends to Skiagraph.—The malpractice case of *Aspy vs. Botkins*, as it is entitled in the Supreme Court of Indiana, was brought by the latter party to recover for alleged negligence in the treatment of an injury which she had received in and about her right knee. While the physician sued was on his case in chief, and one of his attorneys was examining a physician and surgeon called as a witness in his behalf, such attorney made the request that the witness be allowed to examine the knee in the presence of the jury, that he might testify as to the condition of the knee at that time. Objection was made to the granting of this request, and the trial court refused to so order. This leads the Supreme Court to say that where the ends of justice require it, it is the duty of the court, on a timely application, to grant a reasonable request to have the party suing in a personal injury case, on the penalty of a nonsuit, submit to a physical examination with reference to the injury he claims to have sustained. The right is not, however, coextensive with the power of cross-examination, and some latitude of discretion must be recognized as existing in the trial court. Each case must rest on its own foundation, and the party sued who complains, on appeal, that the trial court abused its discretion in refusing

to make the order, must be able to present a case where it is plain that the request should have been granted. The Supreme Court is satisfied that error did not appear in the present instance, for the reason, if for no other, that it required the party suing, a woman, to make a quasi public exposure of her person. That she subsequently offered to exhibit her limb to the jury did not operate to make the prior ruling improper. Again, while the physician was introducing evidence on his own behalf, his counsel called the party suing to the stand, and asked her whether a certain other physician had taken an x-ray photograph or skiagraph of her right knee. Objection was made to the question, and it was shown that whatever such other physician had done in relation to the knee had been done in treating the limb. The Supreme Court says that, in terms, the Indiana statute only purports to render the physician or surgeon an incompetent witness as to the matters therein specified, but it is evident that the protection would amount to nothing, in the case of an honest suitor, if the latter could be compelled to make the disclosure. It is hardly necessary to observe that, if the consultation was itself protected, a like protection would extend to the nuptial voucher thereof.

Constitutionality of Medical Practice Act.—The Supreme Court of the United States says, in *Reetz vs. People of the State of Michigan*, that the power of a state to make reasonable provisions for determining the qualifications of those engaging in the practice of medicine, and punishing those who attempt to engage therein in defiance of such statutory provisions, is not open to question. *Dent vs. West Virginia*, 129 U. S., 114; *Hawker vs. New York*, 170 U. S., 189, and cases cited in the opinion; *State ex rel. Burroughs vs. Webster*, 150 Ind., 607, and cases cited. It was objected in this case that the board of registration in medicine was given authority by Michigan Public Act No. 237 of 1899 to exercise judicial powers without any appeal from its decision, inasmuch as it might refuse a certificate of registration if it should find that no sufficient proof was presented that the applicant had been "legally registered under Act No. 167 of 1883." That, it was contended, was the determination of a legal question which no tribunal other than a regularly organized court could be empowered to decide. The answer is, that the decision of the State Supreme Court is conclusive that the act does not conflict with the state constitution, and the Supreme Court of the United States says it knows of no provision in the federal constitution which forbids a state from granting to a tribunal, whether called a court or a board of registration, the final determination of a legal question. Indeed, it not infrequently happens that a full discharge of their duties compels boards, or officers of a purely ministerial character, to consider and determine questions of a legal nature. Due process is not necessarily judicial process. Neither is the right of appeal essential to due process of law. But while the statute makes in terms no provision for a review of the proceedings of the board, yet it is not true that such proceedings are beyond investigation in the courts. In *Metcalfe vs. State Board of Registration*, 123 Mich., 681, an application for mandamus to compel this board to register the petitioner was entertained, and although the application was denied, yet the denial was based, not on a want of jurisdiction in the court, but on the merits. Again, the court holds that when a statute fixes the time and place of meeting of any board or tribunal, no special notice to parties interested is required. The statute is itself sufficient notice. If this party had applied at any meeting for a hearing, the board would have been compelled to grant it, and if on such hearing his offer of or demand for testimony had been refused, the question might have been fairly presented to the state courts to what extent the action of the board had deprived him of his rights. Then, he seemed to assume that the proceedings before the board were in themselves of a criminal nature, and that the state by such proceedings was endeavoring to convict him of an offense in the practice of his profession. The court says that this was a mistake. The state was simply seeking to ascertain who ought to be permitted to practice medicine or surgery, and criminality arises only when

one assumes to practice without having his right to do so established by the action of the board. The proceedings of the board to determine his qualifications were no more criminal than examinations of applicants to teach or practice law, and if the provisions for testing such qualifications are reasonable in their nature, a party must comply with them, and has no right to practice his profession in defiance thereof. It was further insisted that having once engaged in the practice, and having been licensed so to do, he had a right to continue in such practice, and that this statute was in the nature of an *ex post facto* law. But the court says that the case of *Hawker vs. New York*, 170 U. S., 189, was decisive on that question. The statute does not attempt to punish him for any past offense, and in the most extreme view can only be considered as requiring continuing evidence of his qualifications as a physician or surgeon.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

April 4.

- 1 *Observations on the Plague in the Philippines and India. Charles B. Ewing.
- 2 *Imperative Conceptions: A Study in Differential Diagnosis. L. Harrison Mettler.
- 3 Examination of Milk by the General Practitioner. Henry L. K. Shaw.
- 4 Report of a Case of Almost Fatal Poisoning by Six Grains of Quinin. Lewis A. Conner.
- 5 Reduction of Intussusception. David J. Minchin.
- 6 Death of a Fetus Following an Injection of Diphtheria Antitoxin into the Mother. E. R. Houghton.

1. Plague.—Ewing describes the plague as he observed it at Manila with special reference to tests for the detection of the bacilli in the blood. The leucocytosis and increase in blood plaques, even where no bacilli are to be found, serve to make the distinction between it and malaria and typhoid fever. It is only in later phases of the disorder that the organism appears in numbers, and twenty-four to forty-eight hours before death the blood becomes practically a pure culture. He describes one or two abnormal types such as a case of cutaneous plague in which the chief lesion consisted of a large pustule or an aggregation of small ones, in the right lumbar region, without enlargement of the lymph glands being noticeable. The *Bacillus pestis* was present in the blood. Such cases, however, are rare. As regards precautions, he took none except using an antiseptic on his hands and on the soles of his feet on account of the plague vomit which through lack of the usual hospital facilities was frequently deposited on the floor. The examination of the blood he considers on the whole of little diagnostic value. In this his opinion was confirmed by the testimony of Haffkine whom he met in India. The treatment of the disease, aside from the use of Yersin-Roux serum, is symptomatic. The death rate varies from 40 to 95 per cent. In Hongkong the total was 93.4 per cent. among Chinamen; 77 per cent. is reported among the natives of India; 60 per cent. among the Japanese and 18.2 per cent. among Europeans. Filthy surroundings, lack of ventilation, etc., are especially favorable to the propagation of the disease, and its association with cholera is emphasized by recent evidence in the Philippines and in India. He regards the plague as a cosmic question governed by hygienic, sanitary, commercial, and in part religious considerations. The races that are dangerous from a pest standpoint are all located in the Orient, where ignorance, religion and caste tend to swell the already large mortality. He is somewhat doubtful about quarantine; he thinks it may create a false security.

2. Imperative Conceptions.—Mettler discusses neurasthenic obsessions and what he calls insane imperative conceptions which seem to be associated with auditory hallucinations in the illustrative cases he gives.

Philadelphia Medical Journal.

April 4.

- 7 *Movable Right Kidney as a Cause of Pancreatic Diabetes, with Report of Cases Cured by Nephropexy. Sherman T. Brown.

- 8 *Impressions of Differences in Practice at Low and High Altitudes. Will H. Swan.
- 9 A Critique of the Logical Processes of Medicine. W. B. Kunkle.
- 10 Subcutaneous Emphysema from Perforation of the Pleura by Extension of Tubercular Ulceration from the Lung. Starling Loving.
- 11 *Mouth Infection, Due to Natural Teeth. (Concluded.) D. D. Smith.

7. Pancreatic Diabetes from 'Movable Kidney.—Brown's article is largely a consideration of the anatomic conditions existing in movable kidney, with special reference to the effects on the pancreas, and also includes a report of cases where nephropexy appeared to cause recovery from pancreatic diabetes.

8. High and Low Altitudes.—Swan has investigated the comparative effects of high and low altitudes in different diseases. He sent out a number of questions to physicians and analyzes the answers herewith. His conclusions are that pneumonia, instead of being less curable or more fatal at altitudes such as those of the Rocky Mountain region, is on the other hand more curable. Statistics show better results. He gives figures which are opposed to the prevalent idea and also to the opinion of 60 of the 93 physicians who expressed their views in response to his inquiry. In reference to typhoid fever, 99 seem to think it runs a shorter course at high altitudes, and that is the writer's impression. The replies he received, moreover, gave the general impression that functional nervous disturbances are more frequent and more intractable at higher altitudes. His own belief, however, is that they are about as serious and act in the same manner as at lower levels, and he gives reasons why the other impression may have been derived from increased nervous strain which happens in a large number of cases which go to Colorado for health. It is also the opinion of Dr. Eskridge and Dr. Pershing that functional nervous disorders are not more common or more troublesome at high altitudes. Swan thinks that biliary or digestive disorders are a little less frequent than at the sea level, though some people appear to be more prone to them. He finds rather more frequent use for the salicylates, and that chronic rheumatic affections, especially of the myalgic type, seem to be rather more frequent, while acute articular rheumatism is less so. Convalescence after illness is apt to be more prompt at high altitudes on account of the greater chance of being in the open air and sunshine, and it also seems to him that there is capacity for doing more work, physical and mental, in a short time and without more fatigue, if the effort is not too long continued, but he is quite sure that prolonged, severe, nervous strain tires people more. Whether this applies to physical work, he is not certain.

11. Mouth Infection.—Smith advocates thorough cleansing of the teeth and absolute sanitation. Instead of the ordinary tooth-brush and dentifrice, toothpick and dental floss, soaps, so-called germicidal washes or other agencies, he would have the most careful and complete removal of all concretions, all calcic deposits, semisolids, bacterial plaques, to be followed by thorough polishing by hand methods not only of the more exposed labial and buccal surfaces, but the lingual, palatal and proximal surfaces as well, using for this purpose orange-wood points in suitable holders, charged with finely ground pumice stone as a polishing material. He believes there is an enormous amount of illness of all sorts due to the condition of the oral cavity, which can only be relieved by dental treatment.

Medical News, New York.

April 4.

- 12 *The Significance of Variations in the Internal Secretions. O. T. Osborne.
- 13 *The Significance of Oxaluria. J. Bergen Ogden.
- 14 *The Prognostic Value of the Diazo-reaction in Pulmonary Tuberculosis. Francis C. Wood.
- 15 *Hyperacidity of the Urine. T. W. Hastings.
- 16 *The Prognostic Significance of Albumin in the Urine. Edward W. Lambert.
- 17 *Narcotic Abuse and the Public Weal. J. B. Mattison.
- 18 *The Results of Intravenous Injections of Dilute Formalin Solution in Septicemic Rabbits. William H. Park and William A. Payne.
- 19 *Expert Evidence: A Reply to Hon. John Woodward. William L. Howard.

12. Internal Secretions in Disease.—The conditions which Osborne would specially like to see proven as due to derange-

ments of internal secretions are: Hysteria, neurasthenia, melancholia, hemophilia, rickets, atheroma, sclerosis, gout, leukæmia, chlorosis, shock, diabetes and the general neurotic condition. He considers the thyroid the principal vaso-dilating material producer, while the suprarenals are undoubtedly the main organs of the body to furnish vaso-contracting stuff and the possible cause of sclerosis, endarteritis, etc. In shock there is low blood pressure and vascular paralysis, and to meet these conditions we have in suprarenal or adrenalin chlorid the agents we desire for the condition. Hysteria he considers may possibly be due to hypersecretion in the thyroid, and this seems to be associated with sexual changes. The adrenals seem to have something to do with the production of diabetes, and he has seen good results follow treatment with the suprarenal substance in diabetic conditions. He has also suspected that these organs have something to do with gout, in which he has found thyroid treatment of benefit. In acromegaly the thyroid has always been found atrophied. Thymus, theoretically, he believes may be of value in tuberculous cases as also in hemophilia and rickets. In conclusion he notes a case of lymphatic leukemia which seemed to be injured by remedies which reduced the size of the glands generally, such as nucleinic acid and especially arsenic.

13. Oxaluria.—The occurrence of oxaluria and its causes are noted by Ogden, who thinks that aside from ingested articles containing oxalic acid, it may be the result of imperfect intestinal elimination due to an excessive carbohydrate or nitrogenous diet. How oxaluria comes about in nervous disorders he is unprepared to say.

14. The Diazo Reaction in Tuberculosis.—From a study of some 363 cases of tuberculosis, Wood concludes that:

1. If the urine of a case of pulmonary tuberculosis shows no diazo-reaction and a kidney lesion can be excluded, the prognosis is favorable. Only 10 per cent. of the moderately severe cases here recorded gave a reaction, and in a number of these the reaction disappeared on treatment. Early cases not ill enough to apply for hospital treatment do not give the diazo-reaction.

2. If the urine of a case of pulmonary tuberculosis shows an occasional diazo-reaction the prognosis is not necessarily grave, as only some 66 per cent. of the patients showing an occasional positive reaction die.

3. If the urine of a case of pulmonary tuberculosis shows a continuous strong diazo-reaction the prognosis is very grave, since a large proportion of such cases dies within six months.

4. The presence of a diazo-reaction on the first examination of a patient should not debar the case from a thorough trial of climatic treatment in a proper sanatorium.

15. Hyperacidity of the Urine.—Hastings gives the methods of testing for urinary hyperacidity. The method which he considers best is the one recommended by Naegeli, similar to that in vogue for determining the total acidity of the gastric contents, using phenolphthalein as an indicator and titrating with a decinormal solution of sodium hydroxid. The normal acidity has been described by Brown as equal to 2.5 c.c. of decinormal sodium hydroxid solution for 10 c.c. of urine, and his cases as published showed degrees of acidity varying from at least twice above normal to nearly five times normal. A degree equivalent to 4 c.c. is often without symptoms, but above that burning on micturition, frequent micturition, enuresis, and symptoms of cystitis occur in neurotic individuals particularly. Among 100 cases, 40 presenting symptoms of disturbance of micturition in the course of some affection were tested as regards acidity of urine and 30 of this number were normal, including cases of rheumatism of various kinds, nephritis, cystitis, alcoholic hepatic cirrhosis, carcinoma of rectum and various nervous disturbances. The 10 cases in which the acidity varied from 6 to 14 c.c., included 3 of rheumatism, 6 of nephritis, and 1 of chronic valvular cardiac disease. The disturbance of micturition, however, was no greater than in the 30 negative cases. In the third set of cases of 21 diagnosed as neurasthenia after thorough clinical and laboratory examinations, the only abnormal change in 14 was an increase of acidity from 5.5 c.c. to 12 c.c. of decinormal alkali solution. The 7 remaining cases showed normal degrees of acidity, but there were in some of them other conditions such as deposits of urates, uric acid, oxalates, etc. The alkali seemed to alleviate the conditions in both classes, and suggests a rational treatment for many cases of frequent or nocturnal micturition.

16.—See editorial in *THE JOURNAL*, Feb. 28, 1903, p. 588.

17. Narcotic and Drug Habits.—Mattison speaks of the dangers of the drug habits and especially cocaine, which ultimately tends to insanity if the habit is continued, and the need of a law requiring regulation of the sale of cocaine, morphin, etc., and a law compelling nostrum makers to print the formula on the wrapper and the amount of morphin, etc., contained in each dose.

18. Formalin in Septicæmia.—This article gives the details of experimental research. The quantity of formalin that may be safely given having been determined, a number of rabbits were injected intravenously with 1 to 10 c.c. of an aseptic broth culture of two strains of slightly virulent streptococci from the human blood, an amount sufficient to kill probably in from one to four days. A number was used as control cases. In others, 1 to 5,000 solution of formalin was also injected. In one case a rabbit which received 100 c.c. of a five-thousandth solution of formalin, twenty-four hours before the streptococcus, lived considerably longer than the controls, but as a rule, according to his tables, those receiving formalin injections died earlier than those not receiving them. He thinks the experiments, so far as they go, show that we should be guarded in using formalin, and carefully weigh each case to see whether good or harm has been done. The intravenous injection of water plus sodium chlorid may prove better than water plus formalin.

19. Expert Evidence.—Howard's article is a reply to an attack on medical expert evidence by ex-Judge Woodward of the New York Supreme Court in which it was most savagely denounced. Howard makes out that the fault is in the lawyers and judges and that the lawyers should take the beams out of their own eyes before beginning to meddle with the mote in the doctors'.

Boston Medical and Surgical Journal.

April 2.

20 *Cesarean Section for Placenta Previa, with Report of a Case. P. E. Truesdale.

21 *Further Remarks on the Treatment of Placenta Previa. Frank A. Higgins.

22 *Notes on X-Light. William Rollins.

20. Cesarean Section for Placenta Previa.—The first part of Truesdale's article is a review and analysis of the literature. He finds 13 cases of placenta previa reported in which Cesarean section was performed, in which four mothers and four children died, a large percentage. Two of the cases, however, were operated on only as a very last resort, after everything else had been tried. Excluding these two, the fetal and maternal mortality was 22.2 per cent. each, a much better figure. In all these cases, however, there had been alarming hemorrhages, and the results showed that Cesarean section is not contraindicated when the vitality of the patient is low from loss of blood. He reports a case, one of the 13, in which the mother was saved though the child was lost. He insists on the importance of rigid asepsis in vaginal examination where placenta previa is suspected. He would say that Cesarean section would seem to be the best treatment for placenta previa, complete or partial, when the child is viable, and when the diameters of the pelvis or the conditions of the soft parts render the operation of dilatation and version performed with sufficient rapidity to save the child a dangerous procedure for the mother.

21. Placenta Previa.—Higgins holds the opposite view as regards the propriety of Cesarean section in this condition. He has never seen a case where it was advisable or justifiable. The only suitable condition would be with the mother and child in a good condition, before the occurrence of severe hemorrhage and with the os undilated. He emphasizes the fact that partial previa is not by any means as harmless for the mother as generally held. Of the 5 cases reviewed, 2 with partial placenta previa were the ones with the most serious condition, not on account of the situation, but on account of the neglect of the hemorrhage.

22. X-Light.—Rollins has by observation and correspondence with investigators learned of a number of cases where the

eyes had been impaired by working in x -light. He has recently had occasion to examine a man who had been exposed to a considerable extent since 1896, and though he is less than 40 years of age he can not read the daily papers. To enable him to see his work comfortably at a distance of 43 cm., it was necessary to provide him with double convex glasses, number 26. The necessity of having a non-radiable box enclosing the tube with only the smallest aperture sufficient to supply the rays where they are required is insisted on, and the hands holding the cryptoscope should be protected by a nonradiable covering. During the pumping and tuning of the x -ray tubes they should be kept in an oven with nonradiable walls. He has also noticed that while cancer is not considered contagious, yet several persons who have been treating the disease by the x -rays have been affected. He thinks this might have been avoided if proper precautions had been taken. He says it is, to say the least, unwise to be constantly treating cancer and other diseases by the x -light without regularly fumigating the room and keeping the cryptoscope and other appliances sterile. He advises fumigating the x -ray room with formalin vapor every night, and to have the instruments used of such material that they can be sterilized by heat.

American Medicine, Philadelphia.

April 1.

- 23 *The Use of Compressed Air to Enhance and Prolong the Action of Remedies on the Cerebrospinal Axis: Synopsis of Experiences in Applying the Method over Six Thousand Times. J. Leonard Corning.
- 24 *Hernial Complications. John B. Harvie.
- 25 Case of Bubonic Plague, with Exhibition of the Bacillus. Judson Daland.
- 26 Amyotrophic Lateral Sclerosis in a Boy of 15 with a History of Acute Anterior Poliomyelitis in Infancy. Alfred Gordon.
- 27 *The Influence of Altitude on the Mortality of Pneumonia. Henry W. Hoagland.
- 28 *The Present-day Mortality of Pneumonia. Alexander G. Brown, Jr.
- 29 *Tetanus. Isaac R. Trimble.
- 30 *Lobar Pneumonia and Its Treatment. G. Wehrle.
- 31 On the Classification of Museum Specimens. M. E. Abbott.

23. Compressed Air in Therapeutics.—The effects of compressed air on caisson workers suggested to Corning a method of using this means to enhance the effects of various remedies. The potency of certain remedies which possess a chemical affinity for nervous matter is enhanced when the subject taking them remains in a condensed atmosphere. He describes his apparatus and remarks that the method is of no use in the management of inflammatory and degenerative conditions of the cerebrospinal axis. It may avert the painful crises of ataxia, but does not affect the progress of the disease. In disseminated sclerosis, spastic spinal paralysis, poliomyelitis, its influence is also nil, and it is contraindicated in diseases of the blood vessels, and in all cerebral accidents arising from this source. In neuritis also it is not effectual; it rather augments than diminishes the pain. The same is true of articular rheumatism. The affections in which it is of value are the cerebral and cerebrospinal affections of a functional nature in which pain, exhaustion, insomnia or depression are prominent features. In these its effects are striking and beyond those obtainable in any other way. By increasing the blood pressure in the renal blood vessels, it causes diuresis, which effect is particularly manifest if a diuretic be given even in insignificant doses.

24. Hernial Complications.—Harvie describes some abnormal cases of hernia, mentioning one or two in which the whole intestinal tract formed a hernia and describing a case in detail where the whole bladder passed down into the scrotum from severe muscular straining and functioned there normally.

27. Altitude and Pneumonia.—The common opinion that pneumonia is more fatal at high altitudes is deprecated by Hoagland, who gives statistics showing that even a better percentage of recoveries is obtained at altitudes up to 7,000 feet than at the sea level. Above a certain altitude he admits that the fatality is greater, but the exact line of demarkation is not yet fixed by experience.

28. Pneumonia.—The increase of mortality of pneumonia and its infectious character are insisted on by Brown, who attributes much of the great fatality of late years to influenzal complications.

29. Tetanus.—Several cases treated by antitoxin are reported more or less briefly by Trimble, who thinks it is an agent of considerable value, especially in delayed cases.

30. Pneumonia.—After general remarks on the prevalence of pneumonia and its mortality, Wehrle discusses its treatment. He finds little to indicate any specific for the condition, and thinks on the whole the best results come from rational symptomatic management, including absolute rest in bed from the beginning, exclusion of visitors, good nursing, with a nutritious and digestible diet, elimination, use of normal salt enemas, abundance of fresh air, leaving fever practically untreated unless it is too severe, and employing stimulants when they are required, such as strychnin, arsenic, and ether and camphor in desperate cases.

New York Medical Journal.

April 3.

- 32 *Terminal Coma in Diabetes. Arthur R. Elliott.
- 33 Syphilitic Pseudotabes. Report of a Case; The Differential Diagnosis of Tabes. (Concluded.) Joseph Collins.
- 34 *Practical Points on Intubation of the Larynx for Croup, with a Report of Thirty-six Cases. Fielding L. Taylor.
- 35 *The Practical Recognition of the Tubercle Bacillus in the Sputum. Charles B. Fitzpatrick.
- 36 *The Jews as Immigrants—From a Medical Standpoint. Maurice Fishberg.

32. Diabetes.—The terminal coma of diabetes is illustrated by four cases reported by Elliott. The first was a well marked case of diabetic collapse, the diabetic heart coma of von Schmitz, induced by myocardial degenerative changes under the influence of the depraved diabetic nutrition. It differs from coma diabeticum in the absence of blowing dyspnea, in its short duration and in the profound cardiac symptoms and history. In the second case the exciting cause was due to dietetic imprudence, irritating the kidneys, producing latent nephritis and uremia. In the third case there was a primary diabetic toxemia with finally death from uremic poisoning, and in the last case the patient died from hemiplegia. No autopsy was obtainable, though there was a trauma as an important element. Prophylaxis is of first importance. The earliest indication is the appearance in the urine of the acid toxins, acetone, diacetic acid and beta oxybutyric acids showing the Gerhard's reaction, the importance of which he emphasizes. With the first appearance of this symptom we should relax the rigidity of the diet, protect against all disturbing nervous influences, from fatigue and cold, stimulate elimination so as to promote excretion, having the patient drink as much water as possible, and use copious colonic irrigations. He believes in this stage in the use of simple alkalies such as sodium bicarbonate, that do not interfere with gastric digestion if in proper doses. If coma should appear, or its prodromes, the patient should be put to bed, the bowels thoroughly evacuated, stimulants and digitalis administered and the alkalies given in enormous doses. Oxygen may be administered freely by inhalation. The prognosis, however, with all that can be done, is bad.

34. Laryngeal Intubation.—Taylor describes the methods in intubation, calling special attention to the dangers, pushing down of false membrane, etc., which is rare. Tracheotomy may become necessary and sometimes expiration is impeded or prevented by the valve action of a piece of partially detached membrane at the lower orifice of the tube. In such cases it may be expelled sometimes by suddenly withdrawing the tube after brandy has been given to produce cough. If this is not effective, he uses a short O'Dwyer foreign-body tube for an hour or two, or tracheotomy may be required. Extubation is more difficult than intubation and expression is much more uncomfortable to the patient. Another tube should be ready to be inserted if required. He believes in the hard rubber tubes rather than metal ones, and reports a number of cases.

35. Tubercle Bacilli.—The method described by Fitzpatrick for detecting the tubercle bacilli consists in staining a thin layer of sputum which has been spread and dried upon the surface of a glass slide or cover glass, and then decolorizing it. If the tubercle bacillus is present, it retains the stain, while the rest of the preparation becomes colorless. Another stain of a different color is employed to restrain the parts that have been decolorized. It is based on the usual methods, with the

employment of 3 parts of hydrochloric acid and 97 parts of a 70 per cent. alcohol as a decolorizing agent, followed by the use of an alkali contrast stain. The latter neutralizes the acid and prevents its further action as a decolorizing agent, thus insuring a permanent preparation.

36. The Jews as Immigrants.—Fishberg protests against Shively's statements in the "New York Medical Journal," February 7, as to the deterioration of the character of the immigrants, especially the Jews, which he thinks are, as far as health is concerned, more desirable than the more robust looking Irish or Germans.

St. Louis Medical Review.

April 1.

37 *A Case of Septicemia. Employment of Formalin. W. B. Dorsett.

38 *Carelessness in the Use of the Roentgen Rays. W. S. Newcome.

37. Formalin in Septicemia.—In the septicemic cases reported by Dorsett formalin solution was used according to the same formula as that of Barrows, 1 to 5,000, and there seemed to be a temporary amelioration after the two injections of 500 c.c. which were administered. The patient, however, died of hemorrhage from rupture of an artery in the broad ligament. The case was a desperate one from the start, and Dorsett does not consider it a proper one for the fair trial of a new remedy.

38. X-Rays.—Newcome calls attention to a certain amount of carelessness that is noticed in the therapeutic use of these rays; neglect as to even the most ordinary precautions as to time, distance from the tube, etc., as in certain cases he reports. He also notes that the protection for the adjoining parts is often insufficient; some persons relying on tinfoil, which is certainly not to be depended on.

Cincinnati Lancet-Clinic.

April 4.

39 The Diagnosis and Treatment of Diphtheria. R. C. Long-fellow.

40 Inebriety in Ancient Egypt and Chaldea. T. D. Crothers.

41 President's Address, Alumni Association Medical College of Ohio. George B. Orr.

42 Surgery of the Prostate, Pancreas, Diaphragm and Spleen. (Continued.) B. Merrill Ricketts.

Virginia Medical Semi-Monthly, Richmond.

March 27.

43 *Gastro-enterostomy. John B. Deaver.

44 *A New and Original Stitch and Method of Closing the Abdominal Walls and Other Deep Incisions. Jacob Michaux.

43. Gastro-Enterostomy.—Deaver's article reviews the various methods of performing gastro-enterostomy and its indications. He thinks it ought to be heartily endorsed in gastric and duodenal ulcer. In certain gastric disorders, such as chronic gastritis with multiple erosions, some secretory neuroses of the stomach rebellious to internal medication, etc., it may be indicated, but when it is required in malignant obstruction of the pylorus, it means mere palliation, the disease having gone beyond the possibility of cure. Many benign obstructions due to adhesions thrown out about neglected biliary tract infections may be avoided by earlier operations in gall-bladder surgery. He describes the different methods.

44. New Abdominal Stitch.—The method here recommended by Michaux is as follows:

Take a suture with a needle on either end, and pierce the peritoneum only on one side, bringing the needle out just under the surface of the rectus muscle (supposing we are closing an incision in the median line); pass over the rectus and catch up the aponeurosis. Now lay down needle No. 1, and take up the other and repeat the operation on the opposite side. Now, the peritoneum and aponeurosis are pierced on both sides. The next step is to cross over, taking up the aponeurosis again (with needle No. 1) on the opposite side, carrying the needle through the fat and skin at one thrust. Then needle No. 2 is taken across the incision; the aponeurosis pierced as well as the overlying fat and skin on that side. This completes the stitch.

The aponeurosis is pierced twice on each side, thus ensuring a firm hold upon this structure, and each thread draws the edges together. This the author thinks tends to ensure exemption from hernia. The advantages claimed are uniform tension along the walls of the incision, close approximation of edges of aponeurosis, complete removal of suture after healing, and general simplicity of the operation. He does not claim priority, as he finds Murphy had introduced it before, though it was original with himself.

Medical Fortnightly, St. Louis.

March 25.

45 *How to Cure by a Novel Method, Hopeless Cases of Deafness and Discharge from the Ear. Robert Barclay.

46 The X-Ray Treatment of Cancer, with Report of Successful Cases. Everett J. Brown.

47 Surgery of the Heart—Illustrated with Fifty Stereopticon Slides. (Continued.) Benjamin M. Ricketts.

45. Deafness.—Barclay considers that in many cases of hopeless deafness the difficulty is due to interference with the physical conditions in the ear, the chain of bones, ear drum and so on, are limited or embarrassed in their function by adhesions, etc. In these cases he says there is but one rational method of procedure and that is to liberate the deeper portion of the auditory conducting mechanism from the improperly immobilized portion without, making provision for aerial sound-waves directly to the deeper, still movable portion. The method which he finds most indicated in old hopeless cases is that of affecting the removal of the drum head, hammer and anvil bones—the stirrup bone also being occasionally removed, and bands, synechia, septa, growths, etc., dealt with as indicated, sufficient to liberate and expose the more deeply lying auditory structures. This does away with the defect of drainage by the natural route in case of discharge, and in catarrhal cases produces a skin-like or dermoid transformation of the mucous membrane. He thinks this method should be resorted to when radical methods have been found powerless to correct, and he says that when you find a deaf person who speaks habitually in an abnormally low tone of voice, who hears better in a noise or noisy places—no matter how long he may already have been afflicted, and notwithstanding that every other remedial measure may have been tried in vain—he may yet be relieved by resection of the auditory conducting mechanism, proportionately to the distinctness of these symptoms.

Proceedings of the Pathologic Society of Philadelphia.

February.

SYMPOSIUM ON SERPENT VENOM.

48 *The Poison of Serpents. S. Weir Mitchell.

49 *Venom and Antivenene. Joseph McFarland.

50 *A Comparative Study of Snake Venom and Snake Sera. Hideyo Noguchi.

51 A Case of Remarkably Large Cyst of the Cerebellum. Joseph McFarland.

52 A Fatal Case of Polyarthritides Complicated by Choreiform Symptoms and Vegetative Endocarditis. Augustus A. Eshner.

53 A Case of Ulcerative Endocarditis Involving the Pulmonary Valve, Causing Perforation of the Ventricular Septum, Gangrene of the Nose and Ears, Multiple Infarcts in the Kidneys, etc. H. M. Fisher and W. T. Longcope.

54 Report of a Case of Bubonic Plague, with the Exhibition of the Bacillus. Judson Daland.

March.

55 *Some Experiments on the Immunization of Cattle Against Tuberculosis. Leonard Pearson and S. H. Gilliland.

56 A Contribution to the Pathologic Histology of Bullous Keratitis as It Occurs in Glaucomatous Eyes. G. E. de Schweinitz and E. A. Shumway.

57 *Autopsy Statistics at the Children's Hospital, with Reference to Tuberculosis and Its Etiology. Alfred Hand, Jr.

48. The Poison of Serpents.—Mitchell gives the history of his own investigations of the subject.

49. Venom and Antivenene.—After first noting the work on the subject by Phisalix, Calmette and others, McFarland reports his own experimental work in the line of developing an antivenomous serum. He adopted the plan of intravenous injection when using viperine material, to avoid the extensive local lesions which invariably followed its subcutaneous injection. A remarkable effect, however, of each injection in the horse was syncope, which, however, was soon recovered from. In this way he produced an antivenene serum of considerable value from the horse. Of three horses first experimented on, one succumbed to extensive superficial necrosis following the venom injections. Of the other two receiving intravenous injections, one died of pneumonia and the third horse stood the treatment well until by accident some of the venom was apparently injected into the sheath instead of into the vein itself, resulting in extensive periphlebitis with enormous swelling of the neck and death from suffocation. The point of special interest is that two of the animals died from infection, which is of interest as Welch and Ewing have shown that rattlesnake venom destroys the bactericidal properties of the blood. The

second fact of interest is that in spite of the long immunity, and the very numerous injections of venom which the third horse had received, it appeared to have developed no immunity against the principle he had sought to combat—that is, the local irritative poison, but at the end of a year succumbed to it. The serum of this horse was found to possess properties similar to the antivenomous serum of Calmette; that is, it protected against cobra venom heated to 70 C. for a time, always against rattlesnake and other venoms heated to 70 C., by which the irritating poison was destroyed, but it seemed to have no action on the irritative principle itself of venoms.

50.—See Univ. of Penn. Med. Bulletin, November, 1902.

55. Immunization of Cattle Against Tuberculosis.—Pearson and Gilliland have experimented along the line of Behring's work, and find the following conclusions justified:

1. That after repeated intravenous injections of cultures of tubercle bacilli from human sputum the resistance of young cattle to virulent tubercle bacilli of bovine origin may be increased to such an extent that they are not injured by inoculation with quantities of such cultures that are capable of causing death or extensive infection of cattle not similarly protected. 2. That by intravenous injection much larger quantities of culture of human sputum tubercle bacilli than are necessary to confer a high degree of resistance, or immunity, on the vaccinated animal, may be administered without danger to that animal. We now have in progress incomplete experiments on a number of young cattle, some of which have been under way since last March, for the purpose of testing the duration of this immunity and the extent to which it is effective in protecting cattle against infection from natural sources. We have also started an experiment which we hope will throw light on the open question as to the minimum quantities of culture of non-virulent tubercle bacilli that it may be necessary to administer in order to confer a serviceable degree of immunity, and, further, whether it may be possible to simplify the process of vaccination by successive injections of a few cultures of progressive degrees of virulence.

57. Tuberculosis in Children.—From autopsy statistics of the Philadelphia Hospital, Hand concludes that:

1. The majority of cases of tuberculosis in infants and children is apparently the result of an air-borne infection. 2. A certain percentage of cases is of primary intestinal origin, probably the result of food-infection, as those cases which were subjected to exhaustive experimental study gave bacilli resembling the bacillus of bovine tuberculosis in all of its characteristics. This group is sufficiently large to render imperative measures of prevention. 3. From an anatomic standpoint there is no way of distinguishing those cases of primary bronchial tuberculosis which might be the result of food infection from those in which the infection is air-borne. 4. The large proportion of cases in infants suggests either a greater exposure or a less resistance to the infection as compared with children over two years of age.

Brooklyn Medical Journal.

April.

58 *A Brief History of the Therapy of Various Forms of Light and Radiotherapy. James M. Winfield.

59 *Personal Observations on the Remote Results of Conservative Surgery on the Pelvic Adnexa. John O. Polak.

60 *Gonorrhea in Women. Augustus A. Hussey.

58. Radiotherapy.—As the title indicates, Winfield's article is largely historical, but he reports briefly some of his own experience with the x-rays. He holds that in electric light we have a most valuable therapeutic agent for ameliorating and curing many chronic or troublesome diseases; that the Finsen method is of undoubted value though limited in its scope, and that radiotherapy is more useful than phototherapy because of its wider range of application. It is capable of producing untoward symptoms, and the operator should be fully acquainted with its possibilities and dangers. It is better in lupus than the Finsen light because of its simplicity, and it is of value in almost all forms of cancer, but surgical procedure is preferable if the cancer is small and easy of access. The author's personal experience and careful study of the literature prove to him that radio-therapy has an inhibitory effect on all malignant growths, and that it should be used in inoperable cancer and after removal by surgical means.

59. Conservative Gynecology.—Polak reviews 161 cases of conservative operations on the adnexa. In 75 women one ovary was removed and in 63 one ovary was removed and the other to a greater or less extent resected. In a number of cases the tubes were resected. Several operations were for fibroids. There was no primary mortality. He has been able to follow 20 of the women to pregnancy and one has had three children with but the fraction of an ovary. The functional results have therefore been good, but as far as the pain is concerned, they are less satisfactory. Polak attributes his failures to insufficient appreciation of the exact pathology of

the adnexa and consequent errors in judgment; failure to recognize the presence of remote and coincident lesions causing referred pain such as pathologic conditions of the kidney, appendix, gall-bladder, sigmoid and rectum; to an imperfect toilet of the peritoneum resulting in adhesions; to the improper and irrational use of drainage in pus cases, and finally because in many cases sufficient time was not given to the preoperative preparation of the patient. Another point which contributes largely to the success of conservative ovarian surgery is the maintenance of the ovary in a plane of circulatory equilibrium. If this is not done, its blood balance is destroyed; it will swell, increase in weight and become prolapsed. Suppurative disease within the pelvis is antagonistic to successful ovarian resection as the unprotected resected surface seems to be less resistant to infection. When the ovary is the seat of a single cyst of moderate size or of several small ones or a single hematoma, it may be successfully resected, but when there is multiple cystic degeneration, particularly if these cyst formations are found near the hilum or where there are two or more hematomata within the ovary, oöphorectomy should be the procedure of choice. Tubal lesions are more complex than ovarian degenerations or inflammation. From his experience he would say that the tube that is sacculated, thickened, adherent, impatent or the seat of a chronic suppuration, no matter if it be gonorrheal or septic in origin, demands ablation rather than resection. The field of tubal resection is limited to non-inflammatory anomalies of the distal end when the proximal end is healthy and pervious. He feels justified, however, in addition to the above limitations in advocating incision and drainage of pus accumulations (not gonorrheal) within the tube by vaginal incision, delivery of the tube into the vagina and splitting up its free surface for a distance of 1 to 1½ inches. When the tube has been resected, the newly made ostium abdominalis should be attached to the ovary, to form an adhesion which acts as a tubo-ovarian ligament. After resecting the ovary and tube in the manner suggested, Polak commonly suspends the uterus and in this way raises the ovary to a higher pelvic plane. Another cause for failure has been inability to recognize lesions causing referred pain, most generally movable kidney and appendiceal lesions. Over 20 per cent. of gynecologic patients have more or less movable kidneys, and generally associated with enteroptosis or gastrop-tosis. Imperfect toilet of the peritoneum causes adhesions and their avoidance is desirable. The omentum is not only a great isolator, but also a great mischief maker when it has undergone any traumatism. A bruised or torn omentum should be amputated by individual vessel ligation, mass ligatures tending to cause dangerous omental adhesions. Improper and irrational drainage in pus cases often prevents an aseptic and afebrile convalescence and has been the cause of several of his post-operative failures. It is unnecessary in the majority of pus cases and means incomplete work. The pus of a pyosalpinx or a tubo-ovarian abscess is commonly sterile and may be mopped up with sponges and the soiled surfaces cleansed with 50 per cent. peroxid of hydrogen, which is then washed away with normal salt solution and the peritoneal sac closed without a drain. Persistent oozing which can not be covered in with peritoneum, and pus leakage from puerperal lesions or bowel injuries within the pelvis or in the region of the cecum, or the gangrenous condition of the surroundings may make satisfactory suture questionable and demand drainage. Vaginal drainage should be elected in all pelvic cases. The drain should not be taken out too early, leaving it in place for three or four days, loosening, but not removing it. Rest in bed from forty-eight hours to a week should precede elective abdominal work, and the intestinal tract, heart, skin and kidneys be carefully prepared. Attention to such details makes abdominal work easy.

60 Gonorrhea in Women.—Hussey recapitulates the points in his article as follows:

1. Gonorrhea is a frequent disease among married women. 2. Its effects are often disastrous to the individual, to the family, and to society. 3. It begins as an acute inflammation and soon becomes chronic, or it is chronic from the start. 4. The acute inflammation if seen early and treated intelligently may be cured. The chronic form is often located in the external genitals for a time, and is

amenable to treatment. 5. When the inflammation has involved the tubes and ovaries the normal condition of the parts is rarely attained, and treatment of gonorrhea is made difficult by the fact that it does not apply for treatment at the beginning. It is due, in the acute cases, to her ignorance of symptoms, and in the chronic cases, to lack of treatment. 7. The best treatment is prophylactic. 8. Treatment of the disease, to be effective, must be commenced early. This can be accomplished only by teaching women that urethritis and leucorrhea are often the precursors of a chronic disease that may undermine their health, cripple their reproductive organs and not infrequently cause death.

Buffalo Medical Journal.

April.

- 61 *The Toxins of Insanity. James W. Putnam.
- 62 *Successful Removal of 265 cm. of Gangrenous Intestine. Roswell Park.
- 63 Henry de Mondeville, the Man and His Writings. (Concluded.) Charles G. Cumston.
- 64 *Rudolf Virchow. An Appreciation. Charles A. L. Reed.
- 65 Acetozone in Gastrointestinal Disease. W. F. Drake.

61. The Toxins of Insanity.—Putnam reviews the theories and possibilities of toxins as a cause of the various forms of mental disorder, mentioning the insanity of Bright's disease, the mental symptoms associated with diabetes, constipation, exophthalmic goiter, etc., also puerperal insanity, which is being considered by many as largely a toxic form. The theory of the toxins of insanity is one, he says, which is winning adherents.

62. Intestinal Resection.—The case reported by Park is of interest as being with a few exceptions the most extensive intestinal resection that has been made. In this case 8 ft. and 9 in. of ileum and descending colon, including the cecum, were removed. The origin of the trouble was an inflamed appendix. He calls attention to the fact that most cases of general peritonitis are plainly due to some easily recognized cause taking their real origin from the inflamed appendix. The largest amount of intestine taken in any of his collected cases was that of a boy where nearly twelve feet were removed, and he promptly died. In fact it comprised nearly his whole intestinal tract. In the patient operated on by Park the results were good. Eleven months later the patient was in good health in every respect.

64.—This article appeared elsewhere. See THE JOURNAL of February 28, title 30, p 606.

St. Paul Medical Journal.

April.

- 66 *Gastric Ulcer and Its Surgical Treatment. Judd Goodrich.
- 67 *Vaginal Section and Drainage for Suppuration in the Pelvis. H. P. Ritchie.
- 68 School Sanitation Relative to Sight and Hearing. Frank C. Todd.
- 69 *Treatment of the Hemiplegic State. Arthur Sweeney.
- 70 Injury to Legs of a Child. J. W. Robertson.
- 71 Ectopic Gestation. A. E. Spalding.

66. Gastric Ulcer.—Goodrich's article is a general review of the literature and facts of the subject with a report of cases operated on in St. Paul.

67. Vaginal Section and Drainage.—Ritchie favors the use of drainage because of its conservatism. He finds the immediate mortality of his vaginal operations 6.6 per cent., and considering the circumstances and complications, we may say that the immediate mortality as a result of operation is practically nil. In acute septic cases drainage has its greatest field, and with large abscess and extensive area involved must be looked on as a temporary procedure paving the way for future operation. Considering the high immediate mortality of laparotomy, vaginal section is the elective operation. In puerperal exudates the results are incomparable, but in tubercular cases it should never be attempted. In small abscess, especially of gonorrheal origin and with improved modern methods, both laparotomy and vaginal section must be thoroughly considered, and the operator use his best judgment in considering the condition of the patient, location, size and consistency of the tumor, but the claim that drainage has no field in surgery and that only radical methods are indicated either by the vagina or abdomen, must be amended. Its employment in proper cases with proper after care will be followed by good results.

69. The Hemiplegic State.—The point insisted on by Sweeney is proper attention to the muscles and sets of muscles which produce contractures and the manner in which they act, in the

after-treatment of hemiplegics. By persistently opposing the conditions which favor abduction and fixation, a large degree of comfort and a considerable degree of function can be assured to the patient, which might be lacking otherwise. He believes in starting active measures to prevent contracture from the very first, especially in the case of the arm.

California State Journal of Medicine, San Francisco.

March.

- 72 Final Result of a Lorenz Operation for Congenital Luxation of the Hip. Emmet Rixford.
- 73 Symposium on Diseases of the Pancreas: Report of a Case of Pancreatic Cyst. William P. Cheney.
- 74 Report of a Case of Chronic Interlobular Pancreatitis, Pancreatic Calcification, with Multiple Cysts of the Pancreas. L. W. Allen.
- 75 *Chemical Pathology of Pancreatic Disease, with Reference to Diagnosis. Philip K. Brown.
- 75½ Case of Pancreatic Cyst. E. E. Kelley.
- 76 Treatment of Hydrocele by Eversion of the Tunica Vaginalis (Longuet's Method). Dudley Tait.
- 77 Conservatism in Gynecological Surgery. W. F. B. Wakefield.
- 78 Pott's Disease of the Spine in Children: Its Complications. James H. Tebbetts.
- 79 Treatment of Sclerosis of the Middle Ear. M. W. Frederick.

75. Chemistry of Pancreatic Disease.—The résumé of Brown's paper gives as a probable fact the association of pancreatic glycosuria with pathologic conditions in the islands of Langerhans. Steatorrhea is a symptom of failure of both the bile and pancreatic fluid. A failure of bile to enter the intestine lessens the flow of pancreatic fluid by lack of the proper stimulant. Occlusions of the lower end of the common duct shut off the pancreatic fluid, and if bile is forced into the pancreatic duct in consequence, acute inflammatory disturbance may result in the gland. The steatorrhea of primary pancreatic disease with diminution or absence of pancreatic secretion is marked by an excess in the neutral fats, reaching even 60 per cent. of the total excretion, instead of the normal of between 10 and 15 per cent. and further by a striking diminution of fatty acids. With the steatorrhea is microscopic evidence of a failure of proteid digestion, shown by the finding of muscle fibers and casein coagula. Fermentative and excessive putrefactive changes in the feces are evident to the eye and nose. Indican is present in increased amount in the urine, as are also the ethereal sulphates. The methylene blue test of Williamson may be used to determine a hyperglycemia in a suspected case of diabetic coma when means of obtaining urine are not at hand. Bremer's test is not so useful. Lipuria and lipemia are interesting, but not pathognomonic symptoms. The presence of fat-splitting ferment in the urine might be of extreme value in fixing a pancreatic connection to a glycosuria or to an acute disturbance in the epigastrium.

Western Medical Review, Lincoln, Neb.

March 16.

- 80 President's Annual Address, Custer County Medical Society. C. Pickett.
- 81 *The Surgical Aspect of Prostatic Hypertrophy. J. E. Summers, Jr.
- 82 Sequela of Influenza; or Masked Influenza. Louis Was.
- 83 *Typhoid Fever—Intestinal Paralysis. George Haslam.
- 84 The Importance of the First Treatment in Minor Surgery. J. Henry Young.
- 85 Periosteal Osteo-sarcoma of Upper Extremity of Femur; Ligation of Common Iliac Artery, with Amputation at Hip-joint and Removal of Portion of Pelvis, etc.; Recovery. Leonard Freeman.
- 86 The Clinical Laboratory. J. W. Mayhew.
- 87 Clinical Facts and Their Meaning. Joseph-M. Alkin.
- 88 Headaches of Nasal Origin. James M. Brown.

81. Prostatic Hypertrophy.—Summers holds that the medical treatment of this condition may be successful if taken sufficiently early. Catheter life, however, is always dangerous, and operation is preferable. The mortality in surgical treatment is below 5 per cent. Castration and vasectomy are failures, and the former has a mortality of 16 per cent., besides many cases of insanity are reported as following it. He has used the suprapubic method with varying success, but lately has employed the perineal method with good results. He has operated five times, all of his patients being over 60 years of age and in bad general condition. There have been no deaths.

83. Typhoid Fever.—The intestinal paralysis of typhoid is especially noted by Haslam, who also speaks of the general treatment of the disorder by copper arsenite. He claims that this drug seems to possess almost a specific influence in con-

trolling complications, in proper doses, not over 1/100 gr. though frequently repeated. In cases of intestinal catarrh the benefit is equally marked, but a much smaller dose is sufficient. The complex known as intestinal paralysis, or ileus paralyticus includes at least two forms: 1. Simple intestinal paralysis; 2, virulent or septic intestinal paralysis, the malignant character of which may possibly arise from either of two sources or both, namely from a variation in the metabolism of the bacteria in consequence of the disturbance of normal nerve control, or by the formation of some substance or substances which stimulate the bacteria to virulence, or, secondly, from the excretion into the intestines of some similar substance or substances, but derived in the first place from a septic peritoneum or other septic process. In such cases he would not hesitate to perform high double enterostomy in addition to such other treatment as may be indicated in any severe case of intestinal paralysis, provided the patient is not actually moribund.

Medical Times and Register, Philadelphia.

March.

- 89 Protective Medication from a Hygienic Point of View. J. McFadden Gaston.
- 90 Compound Fractures of the Bones of the Hand or Foot. Thomas H. Manley.
- 91 On the Presence of the Typhoid Bacillus in the Urine and Sputum. Mark W. Richardson.
- 92 A Report of Two Cases of Septicemia, Successfully Treated with H₂ O₂ Medicinal. E. J. Melville.

Georgia Journal of Medicine and Surgery, Savannah.

March.

- 93 The Successful Treatment of Asthma. E. A. Banon.
- 94 The Significance of the Temperature in the Diagnosis of Extrauterine Pregnancy During the Period of Collapse from Hemorrhage. Charles P. Noble.

Memphis Medical Monthly.

April.

- 95 Stricture of the Rectum. Joseph M. Mathews.
- 96 Splenectomy: Two Successful Cases. Moore Moore.
- 97 A Practical Demonstration of an Artificial Support in Treatment of Curvature of the Spine, with Report of Case. John C. Clark.
- 98 Pulmonary Lithiasis, with Report of Case. M. O. Shivers.
- 99 Experience of an Army Nurse in Cuba. Mrs. L. A. Warner.
- 100 Anesthesia. Frank D. Smythe.

Clinical Review, Chicago.

April.

- 101 Lectures on Gynecology. Franklin H. Martin.
- 102 Clinical Lectures on the Etiology, Pathology, Diagnosis and Treatment of Tumors. Endothelioma. A. H. Levings.
- 103 Glimpses at European Gynecology and Obstetrics. Henry F. Lewis.

Fort Wayne Medical Journal-Magazine.

March.

- 104 The Use of Inhalers in Treating Diseases of the Respiratory Organs. George W. Spohn.
- 105 The Therapeutic Value of Radiant Matter and Vibratory Force. A. P. Buchman.

Canada Lancet, Toronto.

April.

- 106 The Causation and Prevention of Phthisis. Byron Bramwell.
- 107 Some Recent Studies of Immunity. J. J. MacKenzie.
- 108 Two Cases in Practice, and an Interesting Book. Ernest A. Hall.
- 109 A Plea for the Open Method of Treating Fractures of the Patella. F. N. G. Starr.
- 110 The Open-Air Treatment for Consumption. Angus MacKinnon.

Louisville Monthly Journal of Medicine and Surgery.

April.

- 111 Foreign Bodies in the Urinary Bladder. W. O. Roberts.
- 112 Gastrectasis. John J. Moren.
- 113 Feigned Eruptions—Report of Five Cases. M. L. Heidingsfeld.
- 114 Dr. James Rodman and His Work. B. F. Eager.
- 115 Professional Honor. C. W. Heffner.

Kingston Medical Quarterly.

January.

- 116 Medicines—Their Uses and Abuses. John Herald.
- 117 Rupture of the Uterus.
- 118 A Case of Mixed Diphtheria Infection. G. W. Mylks.
- 119 Purulent Otitis Media. C. E. O'Connor.
- 120 Notes on 250 Labors. V. Barber.

Columbus Medical Journal.

March.

- 121 Some of the Veteran Medical Teachers of America. Isaac Kay.
- 122 The Absorption Treatment of Cataract and Its Effects on the Eye. John W. Wright.
- 123 The Use of Alternatives in the Treatment of Diseases of the Uveal Tract. C. F. Clarke.
- 124 Some Clinical Notes on Gonorrhea. W. A. Hackett.
- 125 Spasmodic Cough. Elmer S. Oman.

New Orleans Medical and Surgical Journal.

April.

- 126 Spinal Analgesia. R. Denegre Martin.
- 127 Large Interstitial Fibroid Complicating a Breech Presentation. J. R. Doussan.

Southern Practitioner, Nashville, Tenn.

April.

- 128 Some of the Common Diseases of the Eye. G. C. Savage.

Medical Examiner and Practitioner, New York.

March.

- 129 A History of Chronic Nephritis. Louis F. Bishop.
- 130 A Résumé of the Most Potent Factors of Disease and Death in the World's History, with a Review of Modern Prophylaxis. W. H. Irvine.
- 131 Eclampsia—A Clinical Study. S. Marx.
- 132 Local Leucocytosis as the Ally of the Surgeon. Robert T. Morris.
- 133 Fracture of the External Condyle of the Humerus in Children. Carl Beck.

International Journal of Surgery, New York.

April.

- 134 A Few Disputed Points in the Treatment of Pyosalpinx. Ralph Waldo.
- 135 Suprapubic Cystotomy as a Means of Locating the Perineal Urethra—Supplementary Report. Howard Crutcher.
- 136 Physical Examination in Diagnosis of Fractures. Henry E. Hale.
- 137 Nose and Throat Work for the General Practitioner. (Continued.) George L. Richards.
- 138 The Perineum in Labor. Robert C. Robe.
- 139 The Technique of Amputations. Robert H. Cowan.
- 140 The Surgical Assistant. Abdominal Operations. (Continued.) Walten M. Brickner.
- 141 The Surgical Treatment of Enlarged Prostate. Bacon Saunders.
- 142 Report of Some Surgical Cases (Gallstones). W. Monroe Smith.

Mississippi Medical Record, Vicksburg.

April.

- 142 Report of Some Surgical Cases (Gallstones). W. Monroe Society. M. J. Alexander.
- 144 Pneumonia—Report of a Case. M. M. McMillan.
- 145 How Are Young Physicians to Decide on a Treatment for a Patient with Pneumonia? Report of Two Cases. Holder Speck.
- 146 Empyema: With Report of Two Cases. B. L. Culley.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

March 28.

- 1 *Some Experiments on the Nature and Specific Treatment of Hay Fever. Felix Semon.
- 2 *Theories of Immunity and Their Clinical Application. A. S. Grunbaum.
- 3 *On Ankylostomiasis. Oswald Baker.
- 4 *Trypanosomiasis on the Congo. Patrick Manson.
- 5 *Trypanosomiasis and Its Cause. Alex. Maxwell Adams.
- 6 *Filaria Perstans. George C. Low.
- 7 Screw-Worms in St. Lucia. St. George Gray.
- 8 *The Diagnostic Value of Blood Counts in Malarial and Other Fevers. T. H. Delany.
- 9 *Berl-berl Among Lascar Crews on Board Ship. D. W. Keiller Moody.
- 10 Note on the Changes in the Red Cell Produced by the Malignant Tertian Parasite. J. W. W. Stephens and S. R. Christopher.
- 11 A Case of the Form of Chronic Joint Disease in Children Described by Still. F. Parkes Weber.

1. Hay Fever.—In 1902 Dunbar of Hamburg reported the discovery of a toxin in the pollen of certain grasses and maize which produced the characteristic symptoms of hay fever and by using the pollen he produced a toxin which immediately quelled the disease and caused retrogressive changes in the objective symptoms produced by the toxin. Semon has further experimented with this, using Dunbar's toxin and antitoxin on himself and on patients and reports them. From experiments he deduces the following conclusions:

1. There can be no doubt that Professor Dunbar has succeeded in extracting from the pollen of certain grasses (maize, wheat, rye, *Anthoxanthum odoratum*, *Agropyrum repens*, *Cynosurus cristatus*, etc.), a toxin which when instilled into the eyes or nostrils of people predisposed to hay fever, produces in these parts the characteristic subjective and objective symptoms of the disease. 2. The toxin, when injected into the eyes or nostrils of people not predisposed, produced, in the great majority of cases, no symptoms whatsoever, but it certainly appears from Dr. T.'s and my own experiences as if there were instances of transition in which, although the persons experimented on never suffer from typical hay fever, they are yet more susceptible to the influence of the toxin than the ordinary run of people. 3. The effects of the toxin in people suffering from hay fever are as variable in intensity as are the attacks of the affection itself, both with regard to the local and constitutional symptoms. 4. Professor Dunbar's antitoxin certainly pro-

duced immediate disappearance of the subjective, and after a few minutes great amelioration of the objective symptoms. 5. The mixture in equal parts of a toxic solution (1 in 500) and the antitoxin in equal parts to neutralize the specific effects of the toxin. 6. The effects of the antitoxin appear in some instances to be sufficient to prevent a reappearance of the subjective symptoms, while, in other instances repeated instillation of the antitoxin were required to produce ultimately the return to normal conditions.

He remarks that this is only a preliminary report, but believes that we are on the threshold of facts which will enlighten us on the most useful way to treat this common and troublesome disease, but we can not, however, build up excessive therapeutic hopes for the following reasons:

1. We do not yet know what the nature of the special predisposition is which makes one person react violently to the influence of both the natural pollen and of the artificially produced toxin, while it leaves another quite unaffected. 2. While it may be justly hoped that it may be possible to produce an even more effective serum no guarantee can at present be given, nor do we know for certain whether it will be possible to produce such antitoxin in sufficient quantities to use it extensively. It may, however, confidently be hoped that such will be the case. 3. While the antitoxic serum as at present produced quickly neutralizes the local effects of the toxin, it is impossible to foretell—and on this point I wish to insist very strongly—whether in case of genuine attacks of hay fever, an even more powerful serum than at present prepared, applied by way of instillation into the affected mucous membranes, or by subcutaneous injection or by internal administration, will arrest all the symptoms when once fully established, and even if it should do so, whether the effect will be lasting, or whether the symptoms may not return. 4. Finally, it is equally impossible to foretell whether by the prophylactic application of a very powerful serum we shall succeed in altogether preventing the actual outbreak of an attack in those specially predisposed.

He offers this as a warning against expectations that may not be realized.

2. Immunity.—In this second lecture Grunbaum takes up the action of antitoxins, hemolysins, cytotoxins, etc., giving more particularly the views of Metchnikoff and his school.

3. Ankylostomiasis.—This disorder, which was first discovered in 1879, but which has only become fully recognized as a tropical and semitropical scourge of later years is described at length by Baker. He gives its geographic limits as extending between 50 north latitude and 30 south latitude, thus covering a large portion of the north temperate zone, as well as the tropics. It is, however, less common in some places than in others, and almost unknown in some. He thinks, however, the mortality that it directly causes can hardly be exaggerated. The fact that when the parasites are few they do not produce appreciable harm does not affect the fact that in a vast number of cases they occur in such numbers as can not fail to be seriously harmful. He rather questions the views of Loos that it can enter in the hair follicles of the skin, but holds there is ample reason to account for the prevalence of the disease by the habits of the natives of the countries where ankylostomiasis is most prevalent. They generally live in very crowded dwellings with complete absence of all sanitation, are dirty in their habits, eating food with their hands, which are generally not clean, some even eating the earth itself. In Egypt this is a common practice. It is not surprising, therefore, that ankylostomiasis is so prevalent there. The earlier symptoms of the condition are hardly known because patients rarely apply for treatment until their anemia incapacitates them for their daily occupation. In addition to the anemic symptoms, the chalk-white pallor of the nails and mucous membranes, empty pulse and cardiac distress, mental and bodily apathy, edema arising first in the eyelids and subsequently extending to the whole body is common. With this there is usually slight albuminuria, marked mental failure and great drowsiness. When this stage is reached the case is generally hopeless. The blood presents no special symptoms excepting eosinophilia, which is generally met with in helminthiasis. The diagnosis is made certain by the usual appearance of the ova in the feces. The question whether there is a toxin produced by the parasites having hemolytic and other destructive properties is noticed, but Baker hardly thinks that such a factor is necessary to explain the symptoms and conditions produced. The prophylaxis of the disorder may be summed up in one word, sanitation. For treatment there is no vermifuge comparable to thymol, which can be given in doses of 10 to 60 grains, the latter only to very robust persons. The former dosage is much safer, three doses given the same day at varying intervals. If after four or five doses the

ova are still found in the dejecta, the dosing should be repeated. The importance of early recognition is emphasized in conclusion. No clinical examination of a patient in a tropical country can be deemed adequate which does not include a microscopic study of the blood and dejecta.

4. Trypanosomiasis on the Congo.—Manson reports a case and discusses the etiology. He makes the suggestion that the animal that inflicts the bite would seem to be the cause of this case, and this may be the poisonous tick, *Argas moubata*, which has been long known as occurring in portions of Southern and Central Africa.

5. Trypanosomiasis and Its Cause.—Maxwell-Adams suggests the probability of rats being the intermediate carriers of trypanosomiasis and that the disease is conveyed by direct inoculation from its bite.

6. *Filaria Perstans*.—Low describes this parasite which is found near the equator in South America and Africa, especially in the wooded regions, towns and cultivated sections being exempt from it. He has sought to find the insect which carries the disease, but with negative results and he sees no special proof of its connection with sleeping sickness.

8. The Blood Count in Malaria.—Delany has studied some 66 cases in Calcutta Hospital and gives a tabulated statement of his results as to the blood findings. With few exceptions they showed an excessive percentage of large mononuclears. Besides this the lymphocytes are usually largely increased. Taking the normal percentage as between 20 and 30 per cent. or say 25 per cent., they often run up to 60 per cent., or even over this in malaria. The total white blood count is diminished. Allowing 7,500 per c.m. as normal, the relation of white to red cells is frequently 1 to 1,000 or more, instead of the normal about 1 in 600. The more severe the case the more marked the changes. Myelocytes are frequently present to an appreciable extent. The red blood corpuscles are diminished, but the loss of white cells seems to be much greater than that of the red cells as a rule. The hemoglobin is so much less diminished than the red cells in anemic cases that the color index is usually above 1. The reduction of white blood corpuscles to 1,500 or less is of grave prognostic importance. In such cases it is the experience in the Medical College Hospital that large doses of quinin hypodermically will alone save the patient. In four of his cases there was leucocytosis present, an exceptional condition. This seems to be a rare complication of malaria. These were all severe cases and suspected at first to be plague. He suggests that leucocytosis in these severe malarial cases indicates a reaction of the blood to the intense poisoning, and that in such severe cases the leucocytosis varies directly with the intensity of the poison. He also mentions liver abscess which may occur and the need of examining the liver and remarks that it is only by repeated examination of the normal blood that the skill to properly value the blood findings of malaria will be obtained. The greatest difficulty is in differentiating large mononuclears.

9. Beri-Beri.—Moody reports a case occurring on board ship and expresses the opinion that the rice theory of the disease has the best evidence in its favor.

The Lancet, London.

March 23.

- 12 Theories of Immunity and Their Clinical Application. A. S. F. Grunbaum.
- 13 *The Comparative Value of the Mouth, the Rectum, the Urine, the Axilla, and the Groin for the Observations of the Temperature; Especially in Regard to Tuberculosis and to the Effects of Exercise and Other Conditions. F. W. Burton-Fanning and S. Gurney Champion.
- 14 Medicolegal Postmortem Examinations. Henry H. Littlejohn.
- 15 Bilharziosis Surgically Considered. Frank Milton.
- 16 *Further Note on the Pulse Wave in Aortic Regurgitation. Paul M. Chapman.
- 17 Necessity for a More Frequent Use of the Cystoscope in the Diagnosis of Diseases of the Urinary System. John G. Pardee.
- 18 An Unusual Case of Matting of Intestines for Which Double Enterectomy Was Performed Successfully. Bilton Pollard.
- 19 Treatment of a Formidable Case of Sprue by Diet; the Value of Strawberries. Edward H. Young.
- 20 *Advances in the Treatment of Paralytic Deformities. A. H. Tubby.
- 21 A Case of General Miliary Tuberculosis; Symptoms of Acute Myelitis Involving the Conus Medullaris and Cauda Equina; with a Note on the Value of the Abdominal Ice-Bag. Vidal G. Thorpe and Edwyn R. Glazebrook.

trolling complications, in proper doses, not over 1/100 gr. though frequently repeated. In cases of intestinal catarrh the benefit is equally marked, but a much smaller dose is sufficient. The complex known as intestinal paralysis, or ileus paralyticus includes at least two forms: 1. Simple intestinal paralysis; 2, virulent or septic intestinal paralysis, the malignant character of which may possibly arise from either of two sources or both, namely from a variation in the metabolism of the bacteria in consequence of the disturbance of normal nerve control, or by the formation of some substance or substances which stimulate the bacteria to virulence, or, secondly, from the excretion into the intestines of some similar substance or substances, but derived in the first place from a septic peritoneum or other septic process. In such cases he would not hesitate to perform high double enterostomy in addition to such other treatment as may be indicated in any severe case of intestinal paralysis, provided the patient is not actually moribund.

Medical Times and Register, Philadelphia.

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- 91 On the Presence of the Typhoid Bacillus in the Urine and Sputum. Mark W. Richardson.
- 92 A Report of Two Cases of Septicemia, Successfully Treated with H₂ O₂ Medicinal. E. J. Melville.

Georgia Journal of Medicine and Surgery, Savannah.

March.

- 93 The Successful Treatment of Asthma. E. A. Banon.
- 94 The Significance of the Temperature in the Diagnosis of Extrauterine Pregnancy During the Period of Collapse from Hemorrhage. Charles P. Noble.

Memphis Medical Monthly.

April.

- 95 Stricture of the Rectum. Joseph M. Mathews.
- 96 Splenectomy: Two Successful Cases. Moore Moore.
- 97 A Practical Demonstration of an Artificial Support in Treatment of Curvature of the Spine, with Report of Case. John C. Clark.
- 98 Pulmonary Lithiasis, with Report of Case. M. O. Shivers.
- 99 Experience of an Army Nurse in Cuba. Mrs. L. A. Warner.
- 100 Anesthesia. Frank D. Smythe.

Clinical Review, Chicago.

April.

- 101 Lectures on Gynecology. Franklin H. Martin.
- 102 Clinical Lectures on the Etiology, Pathology, Diagnosis and Treatment of Tumors. Endothelioma. A. H. Levings.
- 103 Glimpses at European Gynecology and Obstetrics. Henry F. Lewis.

Fort Wayne Medical Journal-Magazine.

March.

- 104 The Use of Inhalers in Treating Diseases of the Respiratory Organs. George W. Spohn.
- 105 The Therapeutic Value of Radiant Matter and Vibratory Force. A. P. Buchman.

Canada Lancet, Toronto.

April.

- 106 The Causation and Prevention of Phthisis. Byron Bramwell.
- 107 Some Recent Studies of Immunity. J. J. MacKenzie.
- 108 Two Cases in Practice, and an Interesting Book. Ernest A. Hall.
- 109 A Plea for the Open Method of Treating Fractures of the Patella. F. N. G. Starr.
- 110 The Open-Air Treatment for Consumption. Angus MacKinnon.

Louisville Monthly Journal of Medicine and Surgery.

April.

- 111 Foreign Bodies in the Urinary Bladder. W. O. Roberts.
- 112 Gastrectasis. John J. Moren.
- 113 Feigned Eruptions—Report of Five Cases. M. L. Heldingsfeld.
- 114 Dr. James Rodman and His Work. B. F. Eager.
- 115 Professional Honor. C. W. Heffner.

Kingston Medical Quarterly.

January.

- 116 Medicines—Their Uses and Abuses. John Herald.
- 117 Rupture of the Uterus.
- 118 A Case of Mixed Diphtheria Infection. G. W. Mylks.
- 119 Purulent Otitis Media. C. E. O'Connor.
- 120 Notes on 250 Labors. V. Barber.

Columbus Medical Journal.

March.

- 121 Some of the Veteran Medical Teachers of America. Isaac Kay.
- 122 The Absorption Treatment of Cataract and Its Effects on the Eye. John W. Wright.
- 123 The Use of Alteratives in the Treatment of Diseases of the Uveal Tract. C. F. Clarke.
- 124 Some Clinical Notes on Gonorrhea. W. A. Hackett.
- 125 Spasmodic Cough. Elmer S. Oman.

New Orleans Medical and Surgical Journal.

April.

- 126 Spinal Analgesia. E. Denegre Martin.
- 127 Large Intestinal Fibroid Complicating a Breech Presentation. J. E. Doussan.

Southern Practitioner, Nashville, Tenn.

April.

- 128 Some of the Common Diseases of the Eye. G. C. Savage.

Medical Examiner and Practitioner, New York.

March.

- 129 A History of Chronic Nephritis. Louis F. Bishop.
- 130 A Résumé of the Most Potent Factors of Disease and Death in the World's History, with a Review of Modern Prophylaxis. W. H. Irvine.
- 131 Eclampsia—A Clinical Study. S. Marx.
- 132 Local Leucocytosis as the Ally of the Surgeon. Robert T. Morris.
- 133 Fracture of the External Condyle of the Humerus in Children. Carl Beck.

International Journal of Surgery, New York.

April.

- 134 A Few Disputed Points in the Treatment of Pyosalpinx.
- 135 a Means of Locating the Perineal Report. Howard Crutcher.
- 136 Diagnosis of Fractures. Henry E. Hale.
- 137 Nose and Throat Work for the General Practitioner. (Continued.) George L. Richards.
- 138 The Perineum in Labor. Robert C. Robe.
- 139 The Technics of Amputations. Robert H. Cowan.
- 140 The Surgical Assistant. Abdominal Operations. (Continued.) Walter M. Brickner.
- 141 The Surgical Treatment of Enlarged Prostate. Bacon Saunders.
- 142 Report of Some Surgical Cases (Gallstones). W. Monroe Smith.

Mississippi Medical Record, Vicksburg.

April.

- 142 Report of Some Surgical Cases (Gallstones). W. Monroe
- 144 M. M. McMillan.
- 145 Decide on a Treatment for a Patient with Pneumonia? Report of Two Cases. Holder Speck.
- 146 Empyema: With Report of Two Cases. B. L. Culley.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

March 23.

- 1 *Some Experiments on the Nature and Specific Treatment of Hay Fever. Felix Semon.
- 2 *Theories of Immunity and Their Clinical Application. A. S. Grunbaum.
- 3 *On Ankylostomiasis. Oswald Baker.
- 4 *Trypanosomiasis on the Congo. Patrick Manson.
- 5 *Trypanosomiasis and Its Cause. Alex. Maxwell Adams.
- 6 *Filaria Perstans. George C. Low.
- 7 Screw-Worms in St. Lucia. St. George Gray.
- 8 *The Diagnostic Value of Blood Counts in Malarial and Other Fevers. T. H. Delany.
- 9 *Beri beri Among Lascar Crews on Board Ship. D. W. Keiller Moody.
- 10 Note on the Changes in the Red Cell Produced by the Malignant Tertian Parasite. J. W. W. Stephens and S. R. Christopher.
- 11 A Case of the Form of Chronic Joint Disease in Children Described by Still. F. Parkes Weber.

1. Hay Fever.—In 1902 Dunbar of Hamburg reported the discovery of a toxin in the pollen of certain grasses and maize which produced the characteristic symptoms of hay fever and by using the pollen he produced a toxin which immediately quelled the disease and caused retrogressive changes in the objective symptoms produced by the toxin. Semon has further experimented with this, using Dunbar's toxin and antitoxin on himself and on patients and reports them. From experiments he deduces the following conclusions:

1. There can be no doubt that Professor Dunbar has succeeded in extracting from the pollen of certain grasses (maize, wheat, rye, *Anthoxanthum odoratum*, *Agropyrum repens*, *Cynosurus cristatus*, etc.), a toxin which when instilled into the eyes or nostrils of people predisposed to hay fever, produces in these parts the characteristic subjective and objective symptoms of the disease. 2. The toxin, when injected into the eyes or nostrils of people not predisposed, produced, in the great majority of cases, no symptoms whatsoever, but it certainly appears from Dr. T.'s and my own experiences as if there were instances of transition in which, although the persons experimented on never suffer from typical hay fever, they are yet more susceptible to the influence of the toxin than the ordinary run of people. 3. The effects of the toxin in people suffering from hay fever are as variable in intensity as are the attacks of the affection itself, both with regard to the local and constitutional symptoms. 4. Professor Dunbar's antitoxin certainly pro-

made the statement that at the great public insane asylum of Sainte Anne the proportion of patients admitted for the effects of alcoholism alone was 26 to 27 per cent. in 1870, but during the siege of Paris and afterward the proportion dropped to 13 and 14 per cent. As times grew better the alcoholism increased constantly until in 1900 it was 31.35 per cent of simple alcoholics and 19.18 per cent. of alcoholic insane subjects, a total of 50.93 per cent. The incessant progress of alcoholism, he added, is killing the hospitals and asylums, the jails and the houses of correction, while the weakly, epileptic, tuberculous and idiotic children of these alcoholics crowd the benevolent institutions. He expatiated on the established epileptogenic effect of the liqueurs consumed in France and remarked that their toxic action is magnified by the custom of taking them on an empty stomach. [The discussion was closed at the meeting of March 10, the Académie reconsidering its previous action and voting that all essences, natural, synthetic or extractive, which may be incorporated with alcohol or wine, are dangerous or at least harmful drinks. It also urged strenuous measures to diminish the number of saloons.]

29 Non-Alcoholic and Non-Toxic Natural Wine.—Garrigou is professor at Toulouse among the vineyards of France, and is interested in retaining wine as a popular drink while convinced of the dangers from the abuse of alcohol. He has, therefore, worked out a process of concentrating wine in a vacuum by which means all its tannates and salts of lime, etc., are eliminated with the water and alcohol. If water is then added to the desiccated residue a wine is produced that is absolutely non-alcoholic and is also free from every ingredient that could by any possibility be toxic. For those that prefer an alcoholic drink a certain amount of the purest alcohol could be added. By another process he has succeeded in expelling the alcohol with the salts while retaining all the natural water in the wine. This non-alcoholic natural wine retains its flavor and perfume and has received the sanction and approval of a number of leading viticulturists and military men.

30 Hereditary Syphilis of the Bones in Infants, Youths, Adults and the Aged.—Lannelongue presents arguments to sustain his assertion that the affection of the bones which occurs in infants and is known as Parrot's disease, also the affection of the bones that occurs in youths, and that known as Paget's disease in adults and the aged, are all manifestations of hereditary syphilis and are identical at every age. This deforming osteitis is an early or remote accident of hereditary syphilis, and is of the same type whether it affects the long bones, the skull or the trunk. He has been able to find 45 published cases of Paget's disease, and all the writers dismiss the idea of syphilis from the etiology, never taking the pains to examine the patient for other signs of hereditary lues. Fourmer has long proclaimed that one may be a hereditary syphilitic and be liable to all the eventualities of this dangerous taint without showing the slightest evidence of dystrophy or other congenital sign of the condition. Adult patients with Paget's disease do not apply to the physician usually until two to even forty years after they first noticed symptoms of the condition, the hat becoming too small, the trousers too long, etc., or else more or less pains. They do not connect with the condition the headaches they may have had since childhood, the neuralgias of all kinds, but attribute them and the pains to rheumatism. Acquired syphilis is denied, and no one thinks of looking for the writing of heredity possibly clearly inscribed on the tibia, femur, skull, etc. Hitherto the link between the osteitis of youths and that of the aged has been overlooked, but palpation of the long bones then entire length will frequently reveal some irregular enlargement at one or more points. In one of the published cases a young man had an incurvation of the tibia attributed to a traumatism, but at 73 five bones exhibited the same curvature. Migraine is expressly mentioned in 6 out of 33 cases on record, and rheumatic pains in 9 others. Four patients out of 6 with Paget's disease were much benefited by mercury, and its effect is frequently striking in the osteitis of the young. All that is recent, is arrested and retrogresses and the bone resumes its normal consistency. Long established deformities are of course not in-

fluenced. Berger and Chauffard have each observed a case of Paget's disease in a mother and grown son or daughter, exactly similar in each generation.

31. Insurance of Children.—Budín went personally to certain provinces in the north of France to investigate the causes of the unusually high infant mortality. He learned that it was a current custom to insure the children in certain Belgian life insurance companies, which pay a premium on the death of a child. Under one year the parents receive \$1, the premium increasing to \$21 for a child of 6. Women who have baby farms frequently insure the infants, and it is possible to take out a policy on a child in all of the eight companies engaged in this business. For one penny a week, payable in advance, one company agrees to pay an insurance of \$2 to \$12.50 and supply a one horse vehicle for the funeral. Certain companies pay a premium on the death of a child if both father and mother are insured. Others insure the unborn child and pay a premium on its death *in utero*. A Ghent physician collected statistics showing that 140 out of 147 infants insured in that city died before the end of their first year. The Académie adopted a resolution calling the attention of the government to this traffic in infant lives.

Centralblatt f. d. Grenzgebiete, Jena

- 32 (V, 23) Die diagnostische Bedeutung (importance) des Ureter-Katheterismus C. Adrian (Commenced in No. 21) Critical review
- 33 (VI, 1) *Das Nieren (kidney) Aneurysm P. Ziegler Critical review
- 34 (No. 2) Die otitische Pyemie A. Goldschmidt Critical review of 116 articles (Commenced in No. 1)

33 Renal Aneurysm.—Ziegler has collected 19 cases of traumatic and 7 of non-traumatic origin. In the latter, endocarditis with embolism or atheroma of the vessels is accepted as the cause. All the cases which were not operated on terminated fatally, while 3 of the 4 treated by surgical intervention recovered. There can be question only of nephrectomy, and on account of the possibility of ligating the renal vessels at once, the transperitoneal route is preferable. The aneurysm may be painless or accompanied by excruciating pains. The bleeding may be dangerous before any tumor has developed, it may precede the tumor by months and years. The latter may be no larger than a fist or the size of a man's head. The artery is so small that there is no pulsation, and auscultation seldom gives any results. The aneurysm is most likely to be confused with neoplasms, hydronephrosis and hematonephrosis. In case of a neoplasm the growth is liable to be more rapid and the bleeding less, while there is emaciation. In case of metastatic tumors the diagnosis is clearer. The list includes 2 cases published in this country by Keen and Armstrong.

Centralblatt f. Gynaekologie, Leipzig.

- 35 (No. 9) Beitrag zur Kasuistik und Etiologie der Uterus Ruptur H. Futh
- 36 Ueber die ... des Eies (settlement of ovum) an atypischem ... F. Hirschmann and O. Th. Lindenthal
- 37 Beitrag zum Studium der tubaren Zwillingschwangerschaften (twin pregnancies) in derselben Tube (the same tube) E. Perizoni One case
- 38 (No. 10) *Die doppelte Unterbindung (bilateral ligation) der Aa. hypogastrica und ovarica bei inoperablem Uterus Carcinom O. Th. Lindenthal
- 39 Zur Frage des Argentum Katharis Neonatorum C. W. Bischoff
- 40 Ruptura aortae Sectio caesarea in mortua Lebendes Kind (living child) Weisswange One case
- 41 *Zur Technik und Anwendung des vaginalen Kaiserschnitt (Caesarean section) W. Ruhl
- 42 Kolpohysterektomie bei Retroversio uteri gravida cum incarceratione G. Wennerstrom One case
- 43 (No. 11) *Nochmals zur Dilatatorfrage (question) L. Knapp
- 44 *Erfahrungen (experiences) mit dem Dilatatorium von Bossi und Frommer nebst Bemerkungen über einen seltenen Verlauf (unusual course) eines Eklampsie-Falles A. Ostrel
- 45 *Zur Dilatation nach Bossi L. Meyer (Copenhagen)
- 46 *Zur Anwendung des Dilators von Bossi G. Beck (Prague)
- 47 *Zur Frage der schnellen geburtshilflichen Erweiterung (obstetric rapid dilation) A. Calmann (Hamburg)
- 48 *Zur Uterus-Dilatation D. Preiss (Kattowitz)
- 49 (No. 12) Ueber den physiologischen Verschluss (occlusion) der Nabel (umbilical) Arterien und über das Vorkommen von Längs (longitudinal) Muskulatur in der Arterien des weiblichen (female) Genitales C. J. Bucura
- 50 Gleichzeitige (simultaneous) extrauterine und intrauterine Schwangerschaft (pregnancy) K. Reifferscheid
- 51 Fall von traum. nicht durch Colitus entstandenen Vestibular Riss (laceration) der Vagina N. Ostermayer (Budapest)

52 Ein höchst einfacher (extremely simple) Perforator. J. Kadyi (Jaslo).

38. Ligation of Arteries for Inoperable Carcinoma.—Lindenthal reports Lott's experience in 3 cases. The hemorrhages were arrested, but the course of the malignant disease was not materially affected, although the general health was benefited by the cessation of the hemorrhages. In 2 instances the purulent discharge was diminished by the curetting done at the same time. Krönig has reported equally favorable results in 3 cases and Iwanow's experience with 5 has been still more instructive. In his first case the hemorrhage, discharge and pains had all vanished six months after the arteries had been ligated and the patient felt still in good health nine months later. In 3 other cases there had been no recurrence of the menses, six, seven and eight months after the intervention and one patient had gained 9 pounds in forty-six days and another 12 pounds in fifty-one days. In his fifth case the hemorrhages were arrested for only four months, during which time there had been a gain of 4 pounds in weight. Iwanow calls this case a failure and attributes it to the fact that the uterine and ovarian arteries had been ligated in a previous radical operation, and when he ligated the hypogastric arteries collateral circulation had already been established. In all the published cases (not including Pryor's) the hemorrhages were favorably influenced and the purulent discharge diminished, especially when supplemented by curetting. The operation is easily performed under Schleich's local anesthesia. It is interesting to note that in one of Lott's cases menstruation recurred regularly after a time, although the pathologic hemorrhages were permanently arrested.

41. Anterior Vaginal Cesarean Section.—Rühl claims the priority for this operation and states that since he operated on his first patient, Nov. 1, 1895, he has repeated it four times and always with good results. Bumm's technic described in the *Centralblatt*, 1902, No. 52, is identical with his.

43 to 48. Instrumental Dilation.—The various dilators used are described and several are illustrated. All are supposed to be improvements on the original devised by Bossi. Calmann rejects instruments and dilates the os with his fingers. In a case of eclampsia he dilated the closely-shut cervix in a primipara at eight months so that in twenty minutes the os gaped the width of the hand and the fetus was rapidly expelled by the contractions induced. He introduced first one finger, boring and twisting it, then the second finger, and when three fingers were admitted he spread them. He has repeated this method of manual dilation in several instances and always with the best results, never causing injury of the cervix. Ostreil reports 4 cases of instrumental dilation. The instrument did not cause a laceration in any instance, but still in 3 cases, after expulsion of the fetus, a laceration was found extending from the portio vaginalis to the vaginal vault. There was no bleeding from them. They were unmistakably due to the further manipulations, forceps in 2 and version and extraction in 1 case. The mechanism of instrumental dilation of the cervix is quite different from that of normal delivery, and the parts are exposed afterward to laceration from manipulations which in normal circumstances would not affect them. The cervix is dilated only in its transverse diameter and during the birth it contracts down on the membranes and presenting portion. For this reason instrumental dilatation, he thinks, should be restricted to urgent cases. When it is possible to wait an hour he prefers the metreynter or bougies. He describes a case of severe eclampsia apparently cured by delivery. Diuresis was normal, no albumin in the urine and the uterus had been empty for eight days, when suddenly the eclampsia reappeared and the patient lay unconscious nearly the entire day. This case suggests, he thinks, that the etiology of eclampsia varies in different cases. Meyer has used Bossi's dilator in 15 cases and states that a laceration was noted in only one instance, the first case thus treated, in which too much haste was used. No palpable solution of continuity was detected in any other, and there was no bleeding in any case. Beck reports a case to show that the cervix contracts again on the removal of the instrument. The dilation should be carried a little further than necessary to allow for this.

Dermatologische Zeitschrift, Berlin.

- 53 (X, 1.) *Iron Light. Kromayer (Halle).—Eisenlicht. Experimentelle und klinische Untersuchungen.
54 Test of New Medicaments by Applying Them in Salves to the Skin. II. Brat.—Die Hautempfindungen nach Anwendung einiger neuer Medikamente in Salbenform.
55 Further Tests of Atoxyl. W. Schild.—Weitere Versuche mit Atoxyl.
56 *Vegetarische Diät gegen chronische Furunkulose. Guensburg.

53. Improved Iron Light in Therapeutics.—The iron arc light that has been made for phototherapy has hitherto proved disappointing, although it has been established that it fully equals Finsen's apparatus in bactericidal power and also that the erythema induced is essentially the same with both. Kromayer has been studying the iron lamp with numerous experimental and clinical tests and has found that the rays penetrate deeper the less their superficial absorption and action. The rays that are readily absorbed by the skin and induce the erythema do not penetrate beyond it. The iron lamp at close contact produces such an intense erythema in a few minutes that its application has to be suspended before the penetrating part of the ray has had time to act. By eliminating the rays that are absorbed by the skin and produce the erythema, it is possible to obtain the deep action with the iron lamp just as well as with the more expensive Finsen apparatus and in much less time. These extremely frangible rays that are absorbed and make the trouble are the short-waved ultra-violet rays. In the Finsen apparatus they are eliminated by the water filter and distance of more than a yard between the concentrating lens and the skin; they are lost in this long interval. Kromayer proclaims that it is possible to eliminate them by passing the rays through a colored fluid. He has used a solution of methylene blue for the purpose, and found it answer every purpose. It is possible by this means to apply the light close to the skin with maximum strength of current and penetrating power, with all the drawbacks of the short-waved ultra-violet rays eliminated and consequent avoidance of the intense erythema production. He gives cuts of his modification of the "Dermo" lamp, and spectra obtained in control tests with the iron and carbon electrodes, passing the blue light through various thickness of Thiersch flaps and scraps of skin. The results are all in favor of the superiority of the iron light for phototherapy. His lamp, the "Triplet," is made to use with either iron or carbon points or a mixture of both. The blue fluid is in the "compressor" applied to the skin. He details his clinical experience with 18 patients with various affections treated with it, including 7 of lupus. The treatment has been too recent for decisive results, but the general impression is encouraging. The best effect was obtained in 3 cases of alopecia areata.

56. Vegetable Diet in Chronic Furunculosis.—In the case described by Guensburg the patient, a man of 60, had suffered for fifteen years from recurring abscesses with severe nervous cutaneous pruritus, urticaria, etc. There was no trace of sugar or albumin in the urine but an excess of uric acid. He finally adopted a strict vegetable diet, and since then has been free from the furunculosis and other cutaneous affections which had proved rebellious to all therapeutic measures.

Deutsche Med. Wochenschrift, Berlin and Leipsic.

- 57 (XXIX, 11.) Remarks on Contagious Diseases Legislation. C. Fraenkel.—Randbemerkungen zu dem Entwurf eines preussischen Seuchengesetzes.
58 *Beitrag zur Frage der Identität der Rinder- und Menschen- (bovine and human) Tuberkulose. Troje.
59 *Ueber die Spezifität der Eiweiss- (albumin) präzipitirenden Sera und deren Werthbemessung (value) für die Praxis. A. Wassermann and A. Schütze.
60 *Ueber Antistaphylococcen-Serum. Prüscher. (Höchst a. M.).
61 Ueber einen Fall von operativ geheilter Colitis ulcerativa. I. Boas.
62 *Apparatus for Air Douche in Ear Affections. A. Lucae.—Ein zweckmässiger Apparat zur Anwendung der Luftdouche bei Ohrenkranken.
63 (No. 12.) Zur Geschichte der Ruhrforschung (history of dysentery research) und über Variabilität der Bakterien. Kruse.
64 Ueber die Priorität der Entdeckung des Ruhr- (of discovery of dysentery) Bacillus. A. Chantemesse and F. Widal.
65 *Zur Erleichterung (to facilitate) der mikroskopischen Malaria-Diagnose. R. Ruge.
66 Ueber Infusorien im Magen und im Darmkanal (In gastrointestinal canal) des Menschen und ihre klinische Bedeutung (importance). P. Cohnheim.

- 67 *Zur galvanokaustische Behandlung der Prostata-Hypertrophie nach Bottini. K. Vogel.
- 68 Multiple Larynx-Papillome im Kindesalter. (In childhood). F. K. Lammert.
- 69 *Ueber Darmausschaltung (operative exclusion of part of intestine). P. Manasse. (Commenced in No. 11.)
- 70 Behandlung von Puerperal-Fieber mit Antistreptococcen-Serum. Stelnhauer.
- 71 Die Behandlung der Gonorrhoe mit Chinolowismuthrhopanant Edinger (Curin pro Infectione). R. Stern.
- 72 Ueber die Verschiedenheit (difference) der therapeutischen Werth (value) von Chinaverbindungen (quintu combinations). M. Christen.
- 73 Special Representative Medical Business Meeting at Berlin.—Der ausserordentliche Aerztetag in Berlin, March 7, 1903. Landsberger. See Editorial, p. 996.

53. Identity of Human and Bovine Tuberculosis.—Troje publishes a case of unmistakable transmission of bovine tuberculosis to a young butcher by casual inoculation of the skin. The tuberculous affection resembled lupus with a tuberculous affection of the lymph glands and extensive abscess formation, requiring excision of the glands in axilla and infraclavicular fossa.

59. Specific Precipitation with Sera.—Wassermann and Schütze emphasize the fact that this precipitation is specific for the species not for the source of the albumin. It occurs with serum, milk, bone or other substance containing albumin from any animal of a given species. They have established certain units and standards to serve in its application to forensic and other purposes. The amount of precipitating substance in 1 c.c. of the standard precipitating serum is the unit for the test reaction.

60. Staphylococcus Serum.—Prüschner announces that he has succeeded by inoculation of goats with virulent cultures of staphylococci in producing a serum which will protect rabbits against staphylococcus infection. He is now experimenting with horses and expects soon to apply the serum in the clinic.

62. Apparatus for Air Douche in Ear Affections.—Lucas has merely adopted for the purpose the apparatus used in many breweries to determine the pressure of the beer by means of carbon dioxide. It dispenses with the exertion of compressing the bulb, as the compressed carbon dioxide supplies the power.

65. Improved Method of Microscopic Diagnosis of Malaria.—Ruge confirms the great superiority of the improved method recently published by Ross and described in THE JOURNAL of January 31, p. 339. Ruge found that owing to the lack of fixation, some of the blood was washed off in the rinsing and sometimes the entire deposit. He, therefore, improves on Ross' original method by combining the process of dissolving out the hemoglobin with a fixation process. He accomplishes this by placing the slide with the film side down in a 2 per cent. aqueous solution of formalin to which .5 to 1 per cent. of acetic acid has been added. In a few minutes all the hemoglobin is drawn out while the film is fixed and will bear energetic rinsing afterward and staining with dilute Manson's solution or with the Romanowsky stain. As the parasites do not take the stain quite so well after the formalin, it is best to stain first with the Romanowsky and then, after washing off the sediment, treat with dilute Manson's solution to bring out the delicate plasma rings. The specimens are not very handsome, he admits, as there is always more or less sediment, but the parasites show finely and much time and trouble is saved. By this method he sometimes found parasites when the findings were negative by other methods.

67. Galvanocaustic Treatment of Hypertrophied Prostate.—Schede operated on a man of 71 with the Freudenberg instrument according to Bottini's technique; no narcosis, the bladder filled with a solution of boric acid. The patient died suddenly half an hour later from no discoverable cause. The autopsy showed that the cauterization had not been as deep as supposed, and the aspect demonstrated that the fluid in the bladder must have cooled off the cautery so that the desired result was not attainable with it. He, therefore, operated afterward on a man of 74 without filling the bladder with fluid. The patient died forty-eight hours later from acute peritonitis, and the autopsy showed that the bladder wall, not being distended, must have lain in folds, and the cautery cut through one of these folds, making an incision 3 cm. long, with consequent escape of urine into the peritoneal cavity and fatal inflam-

mation. Freudenberg has published a similar case. It is, therefore, inadvisable to operate on an empty bladder. Vogel suggests that these difficulties might be obviated by distending the bladder with air or by raising the pelvis. The latter might have a tendency to stretch the bladder walls by traction on them by the contents of the abdomen.

69. Exclusion of Intestine.—Manasse has recently operated on a boy of 15 who exhibited symptoms suggesting appendicitis or invagination. A number of abscesses was found in the small intestine and he found it necessary to resect 115 cm. and to perform unilateral exclusion of 35 cm. more. He operated according to Senn, thus bringing up to 15, he remarks, the number of cases of this operation that has been published. His patient fully recovered and has now normal stools. At the first laparotomy the small intestine was found covered with false membranes and adhesions, and a liter and a half of pure pus was evacuated. On account of the fibrinous-suppurative peritonitis nearly the whole of the much-distended small intestine was eventrated. The patient recuperated after thirty-six hours of collapse followed by such excessive secretion of intestinal juice that the bedding had to be changed several times a day. Seven perforations of abscesses occurred in two loops of the eventrated intestine and by the third week all the feces were discharged through these fistulae. On account of eczema from the irritation of the intestinal juice the extremely emaciated patient was placed in a continuous bath during the day and dressed with salve at night. The abdominal wound gradually healed in the water bath and the eventrated intestine began to recede. By the end of eight weeks the two portions of the intestine containing the row of three and four fistula openings were parallel in the wound which had been closed all around them. The two affected portions, with the long intervening loop, were then excised; the afferent stump inserted in the cecum and the efferent stump, estimated to be 35 cm. long, treated as stated above, by unilateral exclusion in the third laparotomy.

Muenchener Med. Wochenschrift, Munich.

- 74 (L. 11.) Vom "Aerztlichen Intelligenzblatt" zur "Muenchener Med. Wochenschrift." G. Merkel.
- 75 *History of the Medical Press in Germany. K. Sudhoff.—Das medicinische Zeitschriftenwesen in Deutschland bis zur Mitte des 19 Jahrhunderts.
- 76 Zur Kenntniss der Sogen. Bant'schen Krankheit und der Anemia splenica. F. Marchand.
- 77 Fall von Uronephrose, geheilt durch Ureterplastik und Nierenbecken-faltung (taking up folds in renal pelvis). W. Petersen.
- 78 Die Gefahr der Infektion mit Ankylostoma duodenale im Grubenbetriebe (danger of infection among miners). H. Bruns.
- 79 *Ueber Tetanie gastrischen und intestinalen Ursprungs (origin). W. Fleiner (Heidelberg).

75. History of the Medical Press.—Sudhoff proclaims that it was a physician, T. Renaudot, who first conceived the idea of the newspaper. His name is honorably known in the annals of science, but it is to his inauguration of the newspaper that he owes his chief fame. Since the *Acta diurna* of ancient Rome there had been nothing of the kind in existence, although germs of the future periodical press might be discovered in the Venice *Foglietti* of 1600, and five similar undertakings in Holland, England, Frankfurt and elsewhere, 1605 to 1622. Renaudot was a graduate of Montpellier and established himself as a physician in Paris in 1624. He gained the ear of Richelieu and with his aid founded the first free polyclinic, and in spite of the opposition of Guy Patin succeeded in introducing chemical medicines into medical practice. He established an official "Bureau d'adresses," a kind of general employment bureau with branches all over France, which in connection with his extensive practice and his intimacy with high officials, kept him thoroughly posted on all the events of the day and suggested the publication of a daily paper to impart the news to others. May 30, 1631, the first number appeared, a quarto sheet, printed on one side in four columns and entitled the "Gazette." The highest officials of France used its columns to further their schemes, and even the king, Louis XIII, wrote anonymously for it. Renaudot conducted it for twenty-eight years, long after it was the sole relic of his former eminence. He never found a place for medicine in his "Gazette," and the first journal article

THE PUBLIC SERVICE.

Army Changes.

Movements of officers of the Medical Department, U. S. A., under orders from the Adjutant-General, U. S. A., from March 22 to 28, 1903:

Ashford, Bailey K., captain and asst.-surgeon, U. S. A., is relieved from duty at Ponce, P. R., and will report at San Juan, P. R., for temporary duty at that post.

Holmes, Thomas G., contract surgeon, U. S. A., is assigned to duty as examiner of recruits at Detroit, in addition to his duties at Ft. Wayne.

Kilbourne, Henry S., lieutenant-col., on being relieved from duty at the Presidio will report to the commanding general, Department of California, for duty as chief surgeon of that department.

Rockhill, Edward P., first lieutenant and asst.-surgeon, is relieved from further duty at the U. S. General Hospital, Presidio, and will report to the commanding officer of the Presidio for duty at that post.

Stephenson, William, major and surgeon, is relieved from duty at Monterey, Cal., and will proceed to the Presidio to relieve Lieutenant-Col. Henry S. Kilbourne, D. S. G.

Williams, Allie W., first lieutenant and asst.-surgeon, is relieved from duty at Mayaguez, P. R., and will report at Cayey, P. R., for duty to relieve First Lieutenant Willard F. Truby, asst.-surgeon. Lieutenant Truby will proceed to New York City and report by letter to the Adjutant-General of the Army for further orders.

Yost, John D., first lieutenant and asst.-surgeon, is assigned to duty in the office of the attending surgeon and medical superintendent, Army Transport Service, with station in San Francisco.

A board of officers, to consist of Majors Louis A. LaGarde, Henry P. Birmingham, James D. Glennan, surgeons, is appointed to meet at the Army Medical Museum Building, Washington, D. C., April 1, 1903, for the examination of officers of the medical department for promotion.

The following named officers will report to Major Louis A. LaGarde, surgeon, president of the examining board at the Army Medical Museum Building, Washington, D. C., for examination for promotion: Captains, George M. Wells, Henry C. Fisher, Henry A. Shaw, Charles F. Kieffer, asst.-surgeons.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending April 4:

Medical Inspector G. E. H. Harmon, detached from the Naval Hospital, Port Royal, S. C., and ordered home to wait orders.

P. A. Surgeon D. B. Kerr, detached from the *Wabash* and ordered to the *Buffalo*.

Asst.-Surgeon J. H. Payne, detached from the Naval Hospital, Newport, R. I., and ordered to the *Wabash*.

Surgeon B. H. Dorsey, ordered to the Naval Hospital, Newport, R. I.

Medical Director T. H. Streets, commissioned a medical director from Jan. 31, 1903.

Dr. C. F. Ely, appointed asst.-surgeon, March 6, 1903.

Asst.-Surgeon M. V. Stone, ordered to Naval Hospital, Mare Island, for treatment.

Pharmacist I. N. Hurd, retired from active service on account of disabilities incurred in the service, March 28, 1903.

Medical Director A. A. Hoehling, retired, ordered to duty as a member of the medical examining board, Navy Yard, Washington, D. C.

Medical Director G. P. Bradley, detached from duty as a member of the Medical Examining Board, Washington, D. C., and ordered to duty at the Naval Hospital, Washington, D. C.

Medical Director R. C. Dean, retired, detached from duty as president of the Naval Medical Examining Board, Washington, D. C., and to duty as member of the Naval Retiring Board, Navy Yard, Washington, D. C.

Medical Director F. M. Gunnell, retired, detached from duty at the Bureau of Medicine and Surgery, and to be president of the Naval Medical Examining Board, Washington, D. C.

Medical Director C. U. Gravatt, detached from duty as a member of the Naval Retiring Board, and ordered to report for examination for retirement, then home to wait orders.

A. A. Surgeon J. C. Devries, ordered to recruiting duty.

A. A. Surgeon D. P. McCord, ordered home to wait orders.

Asst.-Surgeons R. H. Michels, J. L. Neilson, M. W. Baker, H. Shaw, B. F. Jenness, J. H. Halloway, R. A. Bachmann, H. F. Strine, F. M. Munson, E. M. Brown, J. P. Traynor, R. E. Hoyt, detached from the Naval Museum of Hygiene and Medical School, Washington, D. C., and ordered to their homes to wait orders to sea.

Surgeon L. W. Spratling, detached from the Naval Hospital, Portsmouth, N. H., and ordered to the Navy Yard, New York.

P. A. Surgeon H. H. Haas, ordered to the Naval Hospital, Portsmouth, N. H.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended April 2, 1903:

Surgeon W. P. McIntosh, to proceed to Sabine Pass, Texas, for special temporary duty.

Asst.-Surgeon L. D. Fricks, granted leave of absence for three days.

Asst.-Surgeon D. E. Robinson, granted leave of absence for three days from March 28, 1903, under provisions of Paragraph 191 of the regulations.

A. A. Surgeon F. B. Adams, granted leave of absence for twenty-five days from April 7.

A. A. Surgeon J. T. Bullard, granted extension of leave of absence from March 15 to 20, inclusive.

A. A. Surgeon A. C. Fraser, granted leave of absence for thirty days from March 27.

PROMOTIONS.

Asst.-Surgeon L. L. Lumsden, commissioned as passed asst.-surgeon (recess) March 31, effective March 14, 1903.

Pharmacist I. N. Hurd, or the second class, promoted to pharmacist of the first class.

BOARDS CONVENED.

Board convened at Washington, D. C., March 31, for the examination of chief engineers of the Revenue Cutter Service for the board: Assistant Surgeon-General L. L. Will, chairman; Assistant Surgeon-General H. D. Geddings, recorder. Board convened at Detroit, April 7, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: Surgeon H. W. Austin, chairman; P. A. Surgeon H. S. M. Eysen, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended April 4, 1903.

SMALLPOX—UNITED STATES.

Alabama: Mobile, March 21-28, 3 cases.
California: Los Angeles, March 14-21, 2 cases; San Francisco, March 15-22, 8 cases.
District of Columbia: Washington, March 21-28, 2 cases.
Florida: Jacksonville, March 21-28, 2 cases.
Illinois: Alton, March 14-21, 1 case; Chicago, March 21-28, 2 cases.
Indiana: Indianapolis, March 21-28, 17 cases, 1 death.
Iowa: Davenport, March 21-28, 5 cases.
Kansas: Wichita, March 21-28, 1 case.
Kentucky: Lexington, March 21-28, 2 cases.
Louisiana: New Orleans, March 21-28, 3 cases, 2 imported, 1 other not traced.
Maryland: Baltimore, March 21-28, 2 cases.
Massachusetts: March 21-28, Boston, 2 cases; Fall River, 2 cases; Lowell, 2 cases.
Michigan: March 21-28, Detroit, 19 cases; Grand Rapids, 4 cases; 1 death; Port Huron, 3 cases.
Minnesota: Minneapolis, Jan. 3-March 28, 92 cases, 3 deaths.
Missouri: Kansas City, March 14-20, 4 cases, 1 death; St. Louis, March 22-29, 6 cases.
New Hampshire: March 21-28, Manchester, 10 cases, 1 death.
New Jersey: Jersey City, March 23-29, 5 cases; Newark, March 21-28, 2 cases, 1 death.
New York: March 21-28, Buffalo, 3 cases; New York, 1 case.
Ohio: Cincinnati, March 20-27, 19 cases, 1 death; Cleveland, March 21-28, 1 case, 1 death; Dayton, March 21-28, 5 cases, 1 death; Toledo, Feb. 14-March 21, 52 cases.
Pennsylvania: Altoona, March 21-28, 4 cases; Butler, March 14-28, 2 cases, 1 death; Dunmore, March 1-31, 3 cases; Johnstown, March 21-28, 9 cases; McKeesport, March 21-28, 2 cases; Norristown, March 21-28, 1 case; Philadelphia, March 21-28, 31 cases, 2 deaths; Pittsburg, March 21-28, 42 cases, 4 deaths, 3 imported.
South Carolina: Charleston, March 21-28, 1 case.
Tennessee: Greene County, March 26, 26 cases; Nashville, March 21-28, 1 case.
Texas: Galveston, March 27, 1 case.
Utah: Salt Lake City, March 21-28, 18 cases.
Wisconsin: Green Bay, March 22-29, 1 case; Milwaukee, March 21-28, 1 case.

SMALLPOX—INSULAR.

Philippines: Manila, Jan. 31-Feb. 7, 1 case; Provinces, Jan. 31-Feb. 7, prevalent.

SMALLPOX—FOREIGN.

Austria: Prague, Feb. 28-March 14, 18 cases, 1 death.
Belgium: Antwerp, Feb. 21-March 14, 5 cases, 3 deaths; Brussels, Feb. 28-March 14, 11 deaths; Ghent, March 7-14, 2 deaths.
Brazil: Rio de Janeiro, Feb. 13-20, 1 death.
Canada: Winnipeg, March 7-14, 1 case.
Canary Islands: Las Palmas, Feb. 14-March 7, 86 cases.
Formosa: July 1, Dec. 31, 1902, 1 case, 1 death.
Great Britain: Birmingham, to March 14, 41 cases, 3 deaths; Bradford, Jan. 15-Feb. 28, 9 cases; Dublin, March 7-14, 9 cases, 1 death; Dundee, Feb. 28-March 7, 1 case; Leeds, Feb. 28-March 14, 26 cases, 3 deaths; Liverpool, Feb. 28-March 14, 172 cases, 13 deaths; London, March 7-14, 2 cases; Manchester, March 7-14, 23 cases, 1 death; Nottingham, Feb. 21-March 7, 4 cases.
India: Bombay, Feb. 24-March 3, 64 deaths; Calcutta, Feb. 21-28, 2 deaths; Karachi, Feb. 15-March 1, 1 case.
Italy: Palermo, Feb. 28-March 7, 1 death.
Mexico: City of Mexico, March 8-15, 6 cases, 4 deaths.
Netherlands: Flushing, March 7-14, 1 case; Amsterdam, March 14-21, 2 cases.
Russia: Moscow, Feb. 21-March 8, 7 cases, 3 deaths; Odessa, Feb. 28-March 14, 6 cases; St. Petersburg, Feb. 28-March 7, 77 cases, 14 deaths; Warsaw, Feb. 21-March 7, 6 deaths.
Turkey: Constantinople, Feb. 22-March 1, 1 death.

YELLOW FEVER.

Brazil: Rio de Janeiro, Feb. 13-20, 25 deaths.
Ecuador: Guayaquil, Feb. 21-March 7, 33 deaths.
Mexico: Vera Cruz, March 14-21, 6 cases, 3 deaths.

CHOLERA—INSULAR.

Philippines: Cebu, Feb. 12, 4 cases; Talisay, Cebu, Feb. 12, 6 cases; Provinces, Jan. 31-Feb. 7, 169 cases, 103 deaths.

CHOLERA—FOREIGN.

India: Calcutta, Feb. 21-28, 71 deaths.

PLAGUE—INSULAR.

Philippines: Manila, Jan. 31-Feb. 7, 2 cases.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, Feb. 13-20, 2 deaths.
Formosa: July 1-Dec. 31, 1902, 265 deaths.
India: Bombay, Feb. 24-March 3, 1,297 deaths; Calcutta, Feb. 15-28, 468 deaths; Karachi, Feb. 1-March 1, 90 cases, 83 deaths; Madras, Feb. 21-27, 1 death.

PLAGUE—UNITED STATES.

California: San Francisco, March 17, 1 death.

